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BY MABEL DOBBIN CRAWFORD, M.D., M.A.O. DUB., F.R.C.S. IREL.,

LATE HON. ASSISTANT SURGEON TO THE LIVERPOOL AND SAMARITAN HOSPITAL FOR WOMEN, AND TO THE LIVERPOOL MATERNITY HOSPITAL.

THIS communication is a result of my experiences at the Liverpool Maternity Hospital during one week.

I was called to an emergency—a failed forceps case. I found a patient with contracted pelvis and a post-mature fœtus: no chance of delivery by natural means. The maternal trauma was slight, the fœtal heart good. I delivered by Cæsarean section, only to find that the baby had bled copiously from one ear, there being a stellate fracture of the parietal and sphenoidal region of the skull. Although the heart continued to beat for a few moments, the child never breathed.

A few nights later my maid brought me the very apt message that I was wanted at once at hospital "for another of those failed force" cases. Two doctors had brought a woman by ambulance and gave me the following history.

The patient was a primigravida, aged 42. After 20 hours in the first stage of labour the senior practitioner considered she had suffered long enough and put on forceps. His utmost strength failed to deliver her, and he summoned a junior colleague to try the power of his younger muscle. He also failed. Hæmorrhage began, a constant trickle. They called an ambulance and brought the woman into hospital, a distance of some 14 miles, bleeding continually the whole way.

I found her blanched and still bleeding, with a thready pulse and pulse-rate of 140. The cervix was only three-quarters dilated and torn in three places; one tear, the length of my finger, extended into the left fornix, and there was also a deep laceration in each side of the vagina. The vertex was presenting, free above the brim, the fœtus post-mature, and the pelvis contracted, the diagonal conjugate being less than 4. A craniotomy saved the mother, but there was no reason why, with antenatal care, a Cæsarean section should not have saved the infant too—a desirable result in a primigravida of 42 years of age.

I thereupon decided to investigate these cases.

Proper Use of Forceps

The obstetric forceps—applied when the signs are favourable—is an instrument of mercy. It is easy to use, and by its aid a woman may be saved much suffering. Yet eminent obstetricians have seriously questioned whether women would not be better off had this instrument never been invented. For in unsuitable cases or at an improper time the forceps is a lethal weapon whereby thousands of living fœtuses have been killed and scores of mothers brought to the door of death. Because this instrument is so perfectly adapted to the proper case, delivering a woman so readily and without injury to mother or child, it always conveys the impression of a useful tool, assuming an appearance of innocence remote from its true character.

The art of obstetrics is practised more by rule-of-thumb than any other branch of medicine, it being inevitable that a science which has grown steadily through the centuries should impose upon its practitioners certain rules which cannot be violated with impunity. The obstetrician, then, needs only to make an accurate diagnosis and his course lies clear before him. The rules for the application of forceps are four.

1. Forceps may only be applied during the second stage of labour—that is, when the cervix is fully dilated and taken up. I find a common misconception on this point. Our house surgeons will sometimes write upon a case sheet: patient in second stage, cervix fully dilated—*anterior lip œdematous*. This, of course, is nonsense. The cervix is not fully dilated if a lip can be felt anywhere. Moreover, if a small rim can be felt anteriorly there will almost certainly be a larger rim present behind.

In rare instances, where every other condition is favourable and delivery urgent, it may be permissible to incise a thin margin of cervix, but it is never justifiable to drag a fœtus through a partially dilated os; the resulting lacerations may cause the mother's death or turn her into a chronic invalid.

2. The second rule is that the head must be fixed and the largest presenting diameter must have passed through the pelvic brim. The forceps, ideally, is an instrument for lifting the fœtal head over the perineum. It may be applied on occasion to the head in the middle strait—that is fixed, the largest diameter through the brim but not yet descended to the perineum. The application of forceps to a head above the brim is absolutely unjustifiable; the instrument so used is a compressor, whereas its proper function is that of traction only.

The application of forceps is only a success—as stated by Berkeley—when their use leaves the mother no worse off than she was before their application, and when the child is born alive. If the maternal efforts fail to mould the fœtal head through the pelvic brim, then the dragging-through of that head by means of forceps is as certain to kill the child as a craniotomy, and far more liable to injure the mother. Choice must rest between correction of malpresentation, Cæsarean section, or craniotomy—or, perhaps, pubiotomy.

3. The presentation must be favourable, vertex with the occiput anterior. Occasionally the use of forceps is permissible in face presentation where the chin is to the front; in brow, where the whole head has passed into a roomy pelvis; or, rarely, in a vertex presentation with the occiput posterior.

4. The membranes must have been ruptured.

An Analysis of 100 Cases

In order to demonstrate the frequency of the abuse of this beautiful instrument and to illustrate the results of forceps applied in unsuitable cases, or at a wrong time, I have analysed the histories of the last 100 patients who were sent into the Maternity Hospital as emergencies, after attempts at delivery by forceps had failed. Five of these cases had been attended by our own house surgeon on the district; the remaining 95 were sent in by doctors in private practice. I am much indebted to my colleagues at the Maternity Hospital for permission to investigate their cases with my own. They occurred during a period of seven years.

Antenatal Care.—In no case had the mother attended an antenatal clinic in the hospital; twelve women had attended outside clinics, four had ceased

* A paper read before the Liverpool Medical Institution.

attendance early, and one had been advised to come into hospital for confinement but had refused.

Parity.—As to parity, 42 were primigravidæ and 58 multigravidæ. If dystocia occur in the first labour one is more anxious as to the shape and size of the pelvis, while in the multigravida anxiety is concentrated upon the size of the fœtus and the condition of the uterine muscle. The multiparous uterus is more likely to rupture in the presence of any obstruction to delivery. One woman was in her twentieth pregnancy, two in their fifteenth, one in her fourteenth, one in her twelfth, three in their tenth, and five in their ninth pregnancies.

REASONS FOR APPLICATION OF FORCEPS.

The reasons given for forceps delivery are set out in Table I.

TABLE I.

(*A*)	None			20
(*B*)	Disproportion—			
	Post-maturity	54	58	
	Occipito-posterior	29		64
	Contracted pelvis	22		
	Hydrocephaly		3	
	Brow		3	
(*C*)	Prolapse of cord			5
(*D*)	Face presentation			9
(*E*)	Impacted breech			1
(*F*)	No note, born before admission			1
				100

(*A*) In 20 cases there was no discoverable reason why forceps had been applied. About half of these had a slow first stage, but that is no indication for forceps. One case showed a remarkable error in diagnosis.

The woman was having twins; one child having arrived there was a little delay, and the midwife sent for a doctor. He came, put on forceps which slipped off repeatedly, and sent the woman into hospital. On admission she was found to have the second amniotic sac intact, the head ballotting freely above the brim, so that forceps must have been applied outside unruptured membranes. All this patient needed was a puncture of the membranes, whereupon she delivered herself with ease.

(*B*) There were three main factors in *disproportion*—namely, post-maturity, occipito-posterior position, and contracted pelvis. In three cases the disproportion was due to hydrocephaly, and in three cases to brow presentation.

Post-maturity.—Of the 100 mothers, on admission four were premature, 42 at term, and 54 were post-mature. It may be a very serious thing for a woman to go past her time. Not only does the fœtal head increase in size, but there is a marked increase in calcification. In one of the cases in my series 44 weeks had elapsed since the last menstrual period, and during the post-mortem examination of the infant the calvarium could only be removed by means of a saw. The post-mature fœtal skull permits of very little moulding. With the varied means at our disposal for the induction of labour at term, no woman need run this risk of difficult labour if she consults a doctor during her pregnancy. The prevention of post-maturity alone would justify antenatal supervision.

Occipito-posterior position (29 cases).—In a vertex presentation, a posterior position of the occiput is always accompanied by incomplete flexion of the head—that is to say, the lowest part of the head is not actually the vertex, but rather the anterior fontanelle, or some part between the anterior fontanelle and the vertex proper. Were the head well flexed and the vertex advanced the latter would be turned forwards by the action of the muscles of the pelvic floor. This incomplete flexion may be the cause of dystocia, for the engaging diameter is the fronto-occipital, averaging 4½ inches, instead of the suboccipito-bregmatic, which averages but 3¾ inches.

Given sufficient time, most cases of occipito-posterior position will result in spontaneous rotation and delivery, failure occurring where the uterine contractions are feeble, or where the pelvic floor has been damaged in previous confinements. The proper treatment of a posterior position of the vertex may be undertaken during the last weeks of pregnancy. Before labour starts the patient should lie upon her other side during her hours of rest. Very commonly the back of the fœtus and the occiput will rotate to the front, as a result of this postural treatment alone. It is so successful that we very seldom employ the pad and binder method of Buist, which, although it has many successes to its credit, is a very uncomfortable procedure for the patient. I have seen at least one case where the fœtus was made so unhappy that it turned from a vertex presentation to a breech.

During labour, and after the head has fixed, the patient should lie on the same side as the occiput, that gravity may favour its descent and rotation. Plenty of time should be allowed. It may be wise to leave the patient for several hours in the second stage, giving sedatives for uterine inertia, that vigour may be renewed after a rest. I do not think it can be sufficiently emphasised that obstetrics cannot be done by the clock. Signs of fœtal or maternal distress are an indication to complete delivery, not the duration of labour. If signs of distress appear, the head should be rotated manually, one hand in the vagina grasping the occiput and coaxing it round while the fœtal body is rotated in the same direction. Manual rotation may be followed by spontaneous or by forceps delivery.

Very rarely forceps may be applied to a head in the occipito-posterior position. The head will usually rotate as it descends, when the forceps may be taken off and reapplied.

Of these 29 cases all but seven were complicated by post-maturity or contracted pelvis or both. Delivery was effected in hospital as follows: in 8 cases by sedatives (spontaneous rotation and delivery); in 6 by manual rotation and forceps delivery; in 5 by forceps delivery, the head rotating during the operation in 2 cases; in 3 by Cæsarean section; and in 7 by craniotomy; 14 infants died or were stillborn; 4 mothers died.

The *pelvis was contracted* in 22 cases, the contraction in nearly all being of minor degree, the diagonal conjugate measuring from 4 to 4½ inches. In this minor degree of pelvic contraction a normal head will very commonly mould through the brim if the fœtus be not post-mature. Progress will be aided by placing the mother in Walcher's position during the second stage. If there be disproportion, and if, with the progress of labour, the head is not moulded through the brim, forceps must not be used, for under these circumstances it is only an instrument of trauma.

Pelvic contraction should be discovered during pregnancy. The best time to examine the pelvis is between the thirtieth and thirty-sixth weeks. Earlier, the maternal parts may not have softened sufficiently to allow palpation of the sacrum, while after the thirty-sixth week the fœtal head is usually in the way, although it may rise above the brim again as it grows larger. In a normal pelvis the sacral promontory is out of reach when examination is made by two fingers. If there is any doubt in the case of a primigravida, it is wise to examine the pelvis under ether with the half hand in the vagina. This is much better done a week or two before term in order to avoid manipulation during labour.

It cannot too often be repeated that contraction of the pelvis is not an indication for the use of forceps. At a recent congress of British obstetricians and gynæcologists, when minor degrees of pelvic contraction were under consideration, speakers congratulated one another that no mention had been made of forceps as a remedy.

(*C*) *Prolapse of Cord.*—In five cases forceps were used because the cord had prolapsed, with a vertex presentation—presumably an attempt to rescue the imperilled fœtus. In one case, after admission to hospital, the cervix only admitted two fingers; the forceps must have been applied outside the cervix. Three of the five infants were stillborn or died. The treatment of prolapse of the cord is sometimes very difficult, but if the woman be placed in the knee-chest position the cord can often be persuaded to slip up above the presenting part and a tight binder may prevent recurrence. In one case the doctor had very skilfully replaced the cord but, not content with this, had applied forceps three times through a quarter-dilated cervix, killing the fœtus and lacerating the mother. Once the cord has been replaced there is no hurry. Forceps are only indicated when all conditions for their application are fulfilled.

(*D*) There were nine cases of face presentation. Three of these were post-mature, and in three the cord had prolapsed during manipulations. In two cases, on admission, the leg was found prolapsed beside the head, the result of an attempt at version. All nine infants were stillborn, and one mother died. Face presentation is not at all unfavourable, provided the chin is directed forwards or turns to the front. The engaging diameter is equal to that in a vertex presentation, averaging 3¾ inches.

Considerable time must be allowed in the second stage of labour. If the pains are deficient, rest should be given by morphia or chloral. It does not matter how many hours are spent so long as the mother is resting and the fœtal heart keeps good. If signs of distress appear, the head should be rotated manually, and may then be born naturally or extracted by forceps. If the head be impacted with the chin posterior, the fœtus will be dead and labour should be terminated by craniotomy.

(*E*) The case of *impacted breech* will be mentioned amongst the maternal deaths.

COMMENT ON THESE REASONS.

Considering, now, the rules for the application of forceps, we find that the required conditions were present in only 4 of the 100 cases. In 52 cases forceps were contra-indicated; in 44 they had been applied too soon.

Take the first rule: in 59 cases the woman on admission to hospital was in the first stage of labour, the smallest degree of cervical dilatation being a two-finger os. In these 59 cases severe maternal lacerations were present in 40, the cervix, vagina, and perineum being extensively torn. In one case forceps had so torn the undilated cervix that a large segment of the posterior lip was hanging outside the vulva, attached to the uterus by a narrow strip of tissue; this woman lived, but was invalided by a pelvic cellulitis.

In three cases the uterus was ruptured. In one the child had been born, but the placenta was in the abdominal cavity; in the other two the fœtus had partially escaped through the rent. All three mothers died. Permanent fistulæ into bladder, rectum, or urethra developed in four cases.

Casual examination will frequently fail to detect the thinned-out cervix of a primigravida.

A friend of mine, called to lend a hand in a difficult confinement, discovered his colleague vastly puzzled because he could not deliver the woman by forceps, failing to notice that at each pull not only the fœtal head, but also the cervix showing a half-inch external os, was presenting at the vulva, the forceps being applied to the vaginal vault.

With regard to the second rule, we find that of the 100 cases the head was free above the brim on admission in 36, forceps being therefore contra-indicated. In 34 the head was entering, the largest diameter being still above the brim; the forceps had therefore been put on too soon.

In 27 this condition was fulfilled, the head being fixed in the pelvis. In two the child had been born, and in one the breech was presenting.

It is a good working rule that, if forceps applied once fail to deliver, the diagnosis is at fault. There is no point in repeating the error. Rather should the diagnosis be corrected by examination with the half or whole hand in the vagina while the patient is still asleep. In many of the cases in my series there is no record of this point; it is, however, stated that forceps had been applied once only in eight cases, twice in nine cases, three times in four cases, four times in one case, five times without an anæsthetic in two cases, six times in one case, and several times in four cases. In one case the forceps had been on for two hours, and in one for three hours.

Whatever may be one's opinion concerning anæsthetics in midwifery, the day is surely past when, in a city practice, operation without anæsthetic can be justified. Any doctor who, having a parturient woman at his mercy, puts on forceps without an anæsthetic, and, failing to deliver, repeats the procedure four times, is, in my opinion, deserving of very severe censure. One of these women, we were told, awakened the neighbourhood with her screams, and she quite certainly died within 16 hours of her admission to hospital.

TABLE II.—*Results.*

Cases.	Method of delivery in hospital.	Mothers.		Infants.			
		Survived but morbid.	Died.	Dead on admission.	S.B.	Died.	Survived.
26	Forceps.	2	1	3	9	1	16
7	Forceps after manual rotation.	—	—	2	3	1	3
28	Craniotomy.	5	4	19	28	—	—
9	Cæsarean section.	5	1	—	2	—	7
1	Cæsarean hysterectomy.	—	1	1	1	—	—
1	Hysterectomy, S.B. before admission.	—	1	1	1	—	—
3	Internal version.	3	—	1	3	—	—
20	Spontaneous.	3	—	4	5	4	11
1	Spontaneous after manual rotation, face.	1	—	—	—	—	1
4	Died undelivered.	—	4	4	—	4	—
100		19	12	35	52	10	38
					62		
					100		

RESULTS OF THE MISAPPLICATION OF FORCEPS.

Table II. shows the results of the misapplication of forceps.

Of the twelve mothers who died, five died from

sepsis, six from shock, one from paralytic ileus on the fifth day after Cæsarean section. Three were primigravidæ. Of the five mothers who died from sepsis :—

One died on the seventh day after Cæsarean section.

Two died after craniotomy of septicæmia and pelvic cellulitis. One of these was in her ninth pregnancy, the whole trouble being that she was post-mature.

One died a few hours after admission, mother and child showing gross infection with a gas-forming bacillus. This was the primigravida who had had forceps applied five times without an anæsthetic.

The fifth was admitted collapsed, forceps having failed; the fœtus had been turned to a breech and extracted as far as its neck before admission. After craniotomy, the infant weighed 11 lb. The mother had already had seven normal labours.

Of the six mothers who died from shock and hæmorrhage, four died undelivered.

In one, we were told, the fœtus had presented by the brow. Forceps were applied after manual flexion of the head to a vertex and failed. Pituitrin was given twice, and version attempted. The woman arrived in hospital with a pulse-rate of 170, the fœtal head presenting above the pelvic brim, and prolapsed beside it were both arms, one leg, and a loop of cord.

The second was a case of impacted breech. Delivery having been attempted by forceps and by a blunt hook, varicose veins in the vagina and vulva were ruptured and death followed from hæmorrhage, a large hæmatoma forming in the pelvic cellular tissue.

In the third case, the cause of the trouble was post-maturity and occipito-posterior position of the vertex. The mother was shocked on admission to hospital, collapsed during a craniotomy, and died.

In the fourth case the uterus had ruptured while the doctor was trying to extract the second of twins, and the mother was moribund on admission to hospital. This was her ninth labour, the previous eight having been normal.

The fifth mother died immediately after hysterectomy for ruptured uterus, while the sixth to die of shock arrived in hospital collapsed, forceps having been applied during the first stage of labour to a head free above the brim; a torn rim of cervix was still present, and the vagina was torn into the urethra in front with an extensive tear in the posterior wall. The mother was treated for shock and delivered by craniotomy, but died almost immediately. She had previously had five normal labours.

Twenty mothers, treated by sedatives and given rest, were delivered spontaneously, but only eleven of their infants survived. Of the 62 infants who died or were stillborn, three only were macerated at birth. In each of these cases labour had continued for over 60 hours, therefore possibly the fœtus had been alive at the onset of labour. The remaining 59 infants were presumably alive at the onset of labour. Of the 62 infants, 28 were born by craniotomy. The causes of death in the remaining 34 were as follows (Table III.) :—

TABLE III.

Cranial injury—	
Fracture of skull	6
Tentorial laceration and intracranial hæmorrhage	7
Subepicranial hæmorrhage	1
Operative trauma, the mother dying undelivered	4
Prolapse of cord	5
No abnormality found and no post-mortem examination	9
True knot in cord round neck	1
Infection by gas-forming bacillus	1

Nine of the infants who survived sustained birth injuries—two having depressed fractures of the parietal bone and four having cephalhæmatoma.

TABLE IV.—*Failed Forceps Cases.*

		Averages for the Maternity Hospital for the past five years.
Maternal mortality	12 per cent.	1·25 per cent.
„ morbidity	31 „ „	6·42 „ „
Fœtal mortality	62 „ „	11·2 „ „

Table IV. shows the mortality and morbidity of the cases in which forceps delivery failed.

If we separate these into booked cases who have attended our antenatal clinic and emergencies who have not, we get the following figures :—

	Booked cases.	Emergencies.
Maternal mortality	0·53 per cent.	3·92 per cent.
„ morbidity	4·76 „ „	15·0 „ „

I submit that the abuse of forceps, with its tragic results, can be avoided by :—

1. Antenatal care—prevention of post-maturity, recognition of contracted pelvis, correction of occipito-posterior position.
2. Accurate diagnosis during labour.
3. Allowance of time and administration of sedatives during slow labour.
4. Use of forceps only when the cervix is fully dilated, the head fixed, and the greatest presenting diameter through the pelvic brim, and then only when demanded by signs of maternal or fœtal distress.

Anomalies in the Use of Obstetric Forceps

1. The application of forceps is the operation most commonly performed in general practice. It is the only operation performed by many practitioners. Many a man who will send a patient to hospital rather than open a whitlow, takes pride in his skill with the tongs. Yet it is the one common operation which many students never see. Under the present arrangement of providing a fortnight's practical midwifery in the medical curriculum, a certain number of Liverpool students, with the requisite 20 cases to their credit, never see forceps applied until they use them themselves in general practice. I simply cannot understand this rule: that two weeks' residence in a maternity hospital is compulsory for medical students and another two weeks optional; responsibility rests with the authorities who ordain the medical curriculum. It has been often stated that the difficulty in teaching midwifery is due to the lack of material—this is not the case in Liverpool. If the difficulty is due to lack of residential quarters surely something could have been done about it before this. The experience provided is just about adequate for a student who is to specialise in eyes or orthopædics, or who at any rate is determined to undertake no midwifery after he is qualified. Surely a student might at least have the option of further experience in this department. It is 20 years since I was a student in another school, but before I was qualified I had lived for six months in the Rotunda, and attended, not 20, but 120 cases—and that experience has stood by me in every case I have seen since.

2. The common use of forceps provides a perfect example of the proverb: "Out of sight, out of mind." Once the instrument has been applied, its blades are out of sight and out of touch—so are the fœtus and the cervix. Hence it comes that a doctor who will handle a new-born infant with gentle care, may think nothing of applying powerful compression to a fœtal head, putting his foot against the bed, and, as I have many times been told, pulling with all his might—and this with the idea of delivering the mother of a living child. It is an instance of extraordinary lack of imagination, and the fault dates, I believe, from student days. Far too little time is spent in practical midwifery.

3. Forceps is most often wrongly applied in an effort to save time or to save pain—to shorten the duration of labour. Time is of little or no importance in midwifery, yet to every doctor time is very precious. The ideal obstetrician is one who has no other interests or engagements, who needs no sleep, whose 24-hour day is wholly at the disposal of his patients. Any restriction in time is prejudicial to the practice of obstetrics, yet it is obvious that we must sometimes

compromise. The point I wish to stress is this: that if an obstetrician can make an accurate diagnosis, he will be able to compromise successfully and have nothing to regret. It is perfectly natural that, when pressed by other work or by agitated relatives, a practitioner may say: "For heaven's sake let's get the forceps on and be finished with it!" but, if the woman be not ready for delivery, he has failed in his trust, and the punishment, which comes speedily, falls upon the patient. There is no discipline more severe than that imposed by the conscientious practice of obstetrics. Probably the object of saving time or relieving pain was the reason why forceps were applied in the 20 cases in which we could discover no indication.

This factor is recognised, of course, by midwives. So often, when a midwife brings a patient to see me in her second pregnancy, the first having ended in a forceps delivery, and I inquire why she had forceps in her first confinement, the answer comes, "Because she had engaged a doctor."

4. Forceps is often wrongly applied through error in diagnosis. Why is it that the idea of putting a hand into the vagina to make an accurate diagnosis is more daunting than that of putting on forceps? An anæsthetic is required for either procedure. There is no great difficulty in diagnosis; everyone knows the shape of an infant's head. It is only a matter of careful examination under anæsthesia.

5. Every practitioner is expected to be a specialist in midwifery; he is therefore liable to a loss of prestige if he calls in a second opinion, and when he fails to deliver with forceps at the first try, he is tempted to try and try again, instead of recognising that when forceps fail they are unsuitable.

Occasionally forceps fail because the wrong type of instrument is used. Unless the fœtal head is fixed below the pubis (that is, is distending the vulva), it is quite impossible to pull in the direction of delivery by means of the straight-handled forceps alone. On account of the presence of the perineum, traction with this instrument can only be made forwards and downwards, thus jamming the vertex against the pubic bone and extending the head. If downward traction only be employed, the perineum is severely torn.

The use of an axis-traction handle permits force to be applied in a line continuing the axis of the blades. The pull is therefore an effective downward pull which accommodates itself to the direction of the parturient canal, in which the blades naturally lie. The plane of the blades is indicated by a line upon the shaft, to which an arrow on the axis handle must be kept directed. If the patient be lying upon her back, the pull is made downwards towards the floor, so long as the fœtal head is behind the pubis, and only when the vertex is fixed below the pubic arch may the pull be directed horizontally, and then upwards.

I was called to the hospital one night not long ago. A competent house surgeon had applied straight-handled forceps in a primigravida, under what she considered perfect conditions, and to her astonishment she could not budge the head. I found her diagnosis quite correct; the vertex was presenting with the occiput anterior, the cervix was fully dilated, the whole head in the pelvis. I was told that the scalp had been visible during pains for three hours. Delivery with axis-traction forceps was easily accomplished, without injury to the perineum, and the child was born alive.

6. The appearance of the fœtal scalp during a pain is not necessarily evidence that the head is on the perineum or that the application of forceps is permissible. I have seen the scalp at the vulva when it covered but a projection of a hydrocephalic head, mushroomed above the pelvic brim. We have all been deceived at some time by an enormous caput formed in front of a head impacted in the pelvic brim.

Having, for seven years, done the midwifery of a general practice, I am not ignorant of its dangers, nor of the immense difficulties met with in the single-handed practice of obstetrics. It is by far the most exacting—and always the worst paid—branch of medicine. In what other branch does a surgeon have to be anæsthetist as well? In country practice I have several times given the anæsthetic and put on forceps myself, with no one in the room but a handywoman. The risks undertaken are unpardonable, involving two lives, but until public opinion comes to recognise the importance of obstetrics, the unreasonableness of expecting one brain and one pair of hands to do the work of two, and the absurdity of expecting every newly qualified doctor to be an expert obstetrical surgeon, there will be little decrease in the figures of maternal and fœtal mortality.

In the meantime, however, I see no reason why the misuse of forceps should not disappear from the list of causes of maternal disability and stillbirth.

THE PRESENT POSITION OF PROSTATECTOMY*

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WITHOUT going too far back into the more or less accidental performance of prostatectomy, one may date the intentional operation for removal of obstruction from those put forward almost simultaneously by McGill in this country and Belfield in the United States. These were in the later 'eighties of the last century. They were not prostatectomies as we now think of them, and though performed by the suprapubic route, were only partial operations and for this reason only partially successful. Their incomplete success led to the rise during the 'eighties and 'nineties of the operation of perineal prostatectomy in which the French school, typified perhaps by the work of Proust, played an important part. In America Watson, Alexander, and, at a later date, Young made important contributions to this method of approach. Then at the beginning of the present century came the much more complete suprapubic operation, probably first done by Fuller of New York, but developed and popularised by Sir Peter Freyer. As a development or offshoot of suprapubic prostatectomy came the so-called two-stage suprapubic operation, intermittently done during the first ten years of the century, but perhaps first clearly and strongly advocated by Pilcher. This had for its purpose the division of the operation into two stages, the first of which provided adequate and if necessary prolonged drainage, and the second enucleated the prostate through the little, if at all, enlarged wound, and resulted in a considerable diminution in the mortality, particularly in the less favourable cases. Finally, bringing the matter fairly up to date, one should note the so-called one-stage open dissecting operation, first in the United States clearly described and frequently done by Judd in 1914, and so fully

* An address delivered at the Medical College, St. Bartholomew's Hospital, on April 18th.

developed and beautifully done by Sir John Thomson-Walker and other British surgeons.

CERTAIN PRINCIPLES AND THEIR APPLICATION.

In this period of something like 30 years there have become established certain principles, and many of the earlier types of operation have entirely disappeared from present-day practice. Of these principles one may pick out the following :—

(1) *Gradual decompression.*—It is generally accepted that the obstructed and over-distended bladder should be emptied gradually, thereby avoiding the accident of bleeding, but (as I think, more importantly) the resulting acute fulminating infection, involving, if serious, the upper urinary tract.

(2) *Drainage.*—About 30 years ago the importance of preliminary drainage, as a method of improving kidney function and stabilising the conditions in the upper urinary tract, was first clearly stated, and it has become an established principle. It will be obvious that the duration of drainage will depend upon the evidence of derangement of kidney function and the evidence of the ability of the patient to restore the function of the kidney to a reasonably satisfactory level.

(3) Finally, it has become clearly established that successful prostatectomy requires effective *removal of the obstruction.* This may seem elementary, but it must be recalled that the early operations of McGill and Belfield failed because they did not satisfactorily remove the obstruction ; that the convincing success of the operation of Fuller and Freyer was due to the very complete removal of the enlarged portions of the prostate; and finally, that in those cases in which the prostate is small, fibrous, or contracted, no methods of operation have been as satisfactory as in the cases where there is massive enlargement and the obstructing tissue can be readily and certainly removed.

Bearing these principles in mind, one may dogmatise in regard to the present situation.

Drainage may be established by one of two methods, either by the introduction of an inlying urethral catheter or by suprapubic cystostomy. Urethral drainage is suited to those cases in which it need not be unduly prolonged—a period which may be set at two or possibly three weeks—and in which the catheter can be reasonably tolerated by the patient. Suprapubic drainage is suited to those cases where prolonged drainage, continued for from a few weeks to several or even many months, is indicated in order to stabilise function, and will also be required for those cases in whom the catheter for any reason becomes intolerable. If drainage can be satisfactorily carried out through the urethra we then have at our disposal, as I now believe, two methods of attack. We may either proceed by the now well-known and well-established one-stage suprapubic prostatectomy in which full exposure is obtained, the enlarged portion of the prostate is removed under sight and the bleeding is satisfactorily controlled ; or we may apply a relatively recent, but as I believe important newcomer in this field, a so-called transurethral prostatectomy. It will be noted that I have entirely discarded the operation of perineal prostatectomy, though I am aware that it is still popular with many very able urologists in the United States, and do not doubt that it will continue to remain so for a considerable period. I have, however, come to the conclusion, which at this time I can only state dogmatically, that the newer operation of transurethral prostatectomy will finally push perineal prostatectomy from the stage and that it will do everything which this operation has done for us in the past in an equally satisfactory way and at a lesser risk. For that group of cases which has required prolonged suprapubic drainage we now have, as I think, two procedures at our disposal :—

(1) The *second stage of the so-called two-stage prostatectomy* may be carried out through the suprapubic wound during the earlier weeks without enlarging the wound, and later by moderate enlargement transversely in order to avoid possible injury to the peritoneum. This operation is, of necessity, a blind procedure but has given very satisfactory results in the group of cases in which it has been required, and does not require niceties of exposure essential to the satisfactory control of bleeding in the one-stage operation because the prolonged drainage will be found to have virtually eliminated serious bleeding from the list of possibilities.

(2) *Transurethral prostatectomy.*—Growing experience has, I think, shown that a very considerable group of patients for whom prolonged suprapubic drainage has been required, and for whom, at the time of instituting drainage, it seemed that suprapubic enucleation would be required, will be found after the lapse of many weeks or months with a prostate so shrunken as to come readily into the field admittedly appropriate for transurethral attack. For this group of cases perineal prostatectomy has never appeared to find a large place, though I have never been quite sure why the enthusiastic advocates of the operation did not regard it as a satisfactory procedure for removal of the obstruction even though prolonged suprapubic drainage had been required in the interests of improved and stabilised kidney function.

It will thus appear that I am of the opinion that prostatectomy is rapidly being boiled down to three procedures : (1) drainage, (2) one-stage suprapubic prostatectomy, or transurethral prostatectomy, and (3) two-stage prostatectomy, either suprapubic or transurethral. I need not burden you with further discussion of one-stage prostatectomy or two-stage suprapubic prostatectomy, since they are not new procedures and have become thoroughly established in the surgical world. It does, I think, behove me to give some account of the latest candidate for favour, transurethral prostatectomy, in order to make it clear why I have given it such an important place in the field.

THE TRANSURETHRAL OPERATION.

We should perhaps date the beginning of the procedures which have led up to present transurethral prostatectomy to the introduction by Bottini in the 'eighties of the last century of his cautery knife for incising the bladder neck. With this instrument, introduced through the urethra, an incision was made through the bladder neck and the obstructing tissue divided by means of an electrically heated blade. The operation was difficult of performance, was blind, and never became widely popular. The next important step in somewhat the same direction was the introduction by Young, of Baltimore, of his so-called prostatic punch, an instrument having a large window in its heel and which can be introduced readily into the urethra by means of an obturator. This obturator having been withdrawn, a portion of the obstructing bladder neck then protruded into the window and was cut away by a circular knife introduced in place of the obturator. This instrument was a very important advance, but as the procedure was not conducted under sight the precise amount and relations of the

tissue removed were doubtful, and in a varying but important number of cases troublesome bleeding occurred which might even require suprapubic opening of the bladder for its satisfactory control. An important improvement upon this instrument was introduced by Caulk, who substituted a circular cautery knife for the cold knife of Young, and thus reduced to a minimum or even abolished troublesome bleeding. Except in the hands of its inventor, however, this instrument never enjoyed wide popularity, since the operation was necessarily a blind one and the precise amount of heat developed by the knife was not easily regulated so that there was danger of cauterising the surrounding tissues if the heat was too great, or failing to control the bleeding satisfactorily if the heat was too little. However, the operations of Young and Caulk clearly prepared the field for the developments of recent years. In 1924, Stern, of New York, made an important advance by developing an instrument resembling a cystoscope, by means of which the bladder neck was constantly under view, and through which the introduction of a wire loop, heated by a high-frequency current, could be manipulated in such a way as to pare away portions of the bladder neck. Stern did not succeed in developing this instrument to his entire satisfaction and I believe later abandoned it, but it was pioneer work which has led to the development of a variety of instruments in which the essential principle of complete visualisation of the field and the removal of obstructing tissue by knives, wire loops, or other forms of cutting blade have been developed. At the present time the operation is being done with a very considerable variety of instruments, utilising these general principles. Among the instruments most employed and most successful at the present time may be named those of Davis, McCarthy, and Bumpus. By means of all of these a complete view of the bladder neck is obtained, the obstructing tissue is accurately located and then accurately removed by methods which control the bleeding.

Coming now to the principles involved in this operation, it must be at once admitted that they revert to the earlier types of partial prostatectomy and would seem thereby to expose themselves to the disasters which befell the operations of McGill and Belfield. On the other hand, it will be widely recognised that prostatic obstruction bears little or no relation to the size of the prostate; that very large prostates may produce no obstruction, whereas the most complete obstruction can be caused by glands which show no enlargement and may even be smaller than normal. We are thus forced to the conclusion that it is not the size of the prostate but the position of the obstructing tissue which is important. The work of Young, Caulk, and their modern successors appears to have demonstrated that the obstructing tissue is that which lies between the verumontanum in front and the inter-ureteric bar behind. The success which has apparently attended the transurethral operations which remove tissue in this location suggests that the lateral lobes which are commonly the most palpable and the most obvious play a relatively small part in the obstruction, and there is at least a strong suggestion which can develop into a certainty only with further experience, that even very considerable enlargement of the lateral lobes may be neglected if a clear channel is established through the region above mentioned. The operations with the instruments of Davis, McCarthy, or Bumpus remove the tissue in relatively small pieces, but particularly with the instrument of Bumpus the tissue is not destroyed by electrocoagulation and can thus be submitted to pathological examination which is occasionally important in the discovery of early cases of malignant disease. Davis, whose experience is perhaps the largest, removes large quantities of tissue and does not hesitate to devote considerable time, amounting occasionally to one or even two hours, to the procedure. Bumpus, on the other hand, is satisfied with removal of somewhat less tissue and his operations are of much less duration. In the cases operated by Bumpus and his colleagues at the Mayo Clinic the average weight of tissue removed is about 5 g., the extremes being 20 g. and 1 g.

USES AND LIMITATIONS.

Having thus briefly described the nature of the operation, it is proper to inquire upon what authority it has intruded itself into the field and what are its present limitations. The best evidence of its right to be considered a very important procedure appears to me to rest upon the experience of Caulk, with his, as I think, less satisfactory apparatus, but with an experience going back over 15 years, and more recently upon the work of many urologists other than those above mentioned, who, together, have presented for our consideration a large group of patients showing satisfactory results over periods varying up to as much as ten years. Their accumulated experience appears to me to show conclusively that operations done in this way do in fact satisfactorily remove obstruction. The next important considerations are those of the operative risk and the duration of hospital confinement. There are enthusiastic advocates of the operation who express the opinion that there is no mortality properly attributable to the operation. Our experience at the Mayo Clinic, which now runs to about 250 cases, does not appear to me to justify such great optimism. Our mortality from all causes during a period of six weeks from the operation is somewhat under 3 per cent., and it does not seem to me likely that in any large series of cases a much lower mortality will be obtainable. In any operation done upon patients in this age-group it does not seem to me helpful to attempt to exclude from mortality statistics patients alleged to have died from vascular accident or of intercurrent pneumonia, thought not to be connected with the operation itself. It appears to me wiser to credit ourselves with all of this mortality on the general ground that the patients probably would not have died if no operation had been undertaken. Moreover, I do not think that it is helpful to paint the lily, and if this method of operation will in fact relieve the obstruction at an operative risk between 2 and 3 per cent. it will achieve better results than have yet been forthcoming from any other operation for prostatectomy.

Perhaps one of the greatest advantages claimed, and I think substantiated, from this operation is the relatively brief confinement as compared with any other method. At best the perineal operation confined patients for a period of three to four weeks, not including the period of drainage. For the suprapubic operation a somewhat longer period was generally necessary. The transurethral operation can be expected to require confinement varying from three or four days to two weeks at the maximum, and averaging between seven and ten days. At the end of this period the patients are up and about, completely emptying their bladders and in a condition safely to leave the hospital and perhaps even the immediate care of the surgeon. This is a very great improvement over other methods and deserves being marked up to the credit of the procedure.

It will doubtless be objected that as only a relatively small amount of tissue is removed recurrence will be more likely. To this one can only reply that recurrence has not been unknown after relatively complete operations by the suprapubic or the perineal route, though it must be admitted that such recurrences were relatively uncommon. It must be admitted that at the present time there is no commanding array of patients treated by this method more than five years ago from whom conclusions can be drawn. There are, however, a considerable number over five years some even more than ten years, in whom recurrence has not taken place. Furthermore, it is not inconceivable that an operation of relatively trivial risk might properly be repeated after a lapse of four or five years and the patient yet be better off than had he been forced to withstand the fundamental disturbance of a more serious operation.

THE FIELD OF APPLICATION OF TRANSURETHRAL PROSTATECTOMY.

It is proper, I think, in conclusion, that I should state my own view as to the proportion of cases of obstructing prostate which may properly be treated by this method. It will generally be admitted that the operation is most obviously suited to patients with small glandular hypertrophies and in general to the smaller types of obstruction. I am still doubtful whether the operation can be satisfactorily applied to patients with very great enlargement of the commissural subcervical glandular structures, in general the group commonly referred to as median lobe enlargement. Some of these enlargements reach very great size and project backward, entirely covering the trigone and in some cases are more or less pedunculated. For this group I have hesitated to advise transurethral prostatectomy, though I am aware that it has been successfully employed in such cases. For the present at least I should prefer for these patients the suprapubic method of attack. I am also hesitant in regard to patients with large lateral lobes which have herniated backward through the vesical sphincter and come to lie in an obstructing position in the mid-line. The transurethral approach seems to me considerably handicapped in dealing with this group. Here suprapubic prostatectomy is at its best and I think further experience, at least, is required before admitting that the lesser procedure will produce wholly satisfactory results. For the moderate enlargements such as would be classified as one and two on a scale of four, I am satisfied that the transurethral attack is well suited and has demonstrated satisfactory results. At the present time at the Mayo Clinic something like half of the cases of prostatic obstruction appear to us wholly suited to this method, and I observe that the proportion which we regard as suitable has steadily increased during the last two years.

Briefly stated then, my opinion is this. I will not, at the moment, go "sled-length" with the enthusiasts who take the view that any obstructing prostate can be satisfactorily dealt with in this fashion. I shrewdly suspect that with growing experience and with the inevitable improvements of technique something like three-quarters of the cases will, within the next few years, come properly within the field of this operation. It will be observed that it is equally applicable to the patient who requires but little urethral drainage and to the patient who has required prolonged suprapubic drainage, that it carries beyond question the lowest mortality of any of the modern operations, and that it appears to give satisfactorily permanent results.

ENDO-URETHRAL TREATMENT OF ENLARGED PROSTATE *

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THE history of prostatic obstructions with its manifold sequelæ, near and remote, is a fascinating one. Not the least interesting feature of this subject in retrospect has been the types and personalities of the workers in this field during bygone years. How prescient was the clinical sense of these men! For, long before surgical enucleation was even considered, many attempts were made along such lines as galvano-cautery incision via perineum and urethra, of bars and other prostatic obstructions at the vesical neck.

These discerning attempts were only occasionally successful, not because of mistaken clinical concept, but for the very good reason that the collateral sciences had not yet developed to the stage where they could supply the exacting optical and electrical equipment essential to this highly technical procedure. We are back where our predecessors began and to-day, equipped with better instrumental appliances, are able to accomplish the objective they visualised but failed to achieve.

Fortunately for those of us contemplating the advent of senescence there comes this note of optimism—this pleasant prediction—that prostatic obstructive manifestations can and should be recognised at their incipiency, that at such a stage of development, these early indications of later ills, may be easily and expeditiously removed by a relatively minor and precise surgical instrumental procedure.

To-day there is crystallised before us the combined efforts of sustained research during the past 50 years. The basic concepts were laid down in the early years, to be built upon, piece by piece, as time went on. Notable among the builders upon that early foundation are to be mentioned Young, Caulk, Stern, Davis, Luys, and Foley.

Some 19 years ago I reported two cases of obstructing prostates apparently cured by endo-urethral instrumental measures. The immediate results were spectacularly successful. Later attempts were unsatisfactory because of obvious electrical limitations. Here the offending prostate was removed by means of an Oudin high-frequency current.

My early attempts in the development of visualised cutting loops date back to 1922. They are still in our possession, and in the light of subsequent developments present an interesting collection. At that time visibility had to be sacrificed to adequate insulation against spark-gap currents, which rendered cutting electrodes so bulky as to be impractical. Neither did I regard the direct or indirect type of vision incorporated in the endoscopes of that day as wholly suitable. It was not, therefore, until the advent of the new amphitheatre or panendoscopic system of vision and the later development of the revolutionary electrical machine, both of which were devised by Mr. Frederick Wappler, the brilliant son of his distinguished father, Reinhold, that this long sought-for goal could have been approximated.

Whatever success may attend the procedure herein outlined I cheerfully ascribe to Caulk.

* Read before the Southeastern Surgical Congress, U.S.A., March 7th, 1932.

For it was he who demonstrated that instrumental endo-urethral approach in the management of prostatic hypertrophy was a feasible procedure, and it was the inspiration of his work that, in the face of many discouragements, kept us everlastingly at it.

This new technique constitutes a departure from the methods heretofore described, in that, with amphitheatre vision, one sees the entire prostatic urethra in tubular perspective, as though one looked from an observation car into a well-illuminated tunnel. Thus one sees the number, type, and extent of prostatic boulders that encroach upon its lumen. In simplest terms, with this visual survey in mind and under the most precise observation the cutting loop which is fitted to a rack and pinion, is adjusted behind the obstruction, the cutting current started with a foot switch and the loop withdrawn by means of the pinion near the eye-piece, bringing with it a tubular cast of prostatic tissue comparable in size to the loop. The loop when charged with this new current, cuts under water smoother and cleaner than the sharpest scalpel and what is very important, coagulates superficially as it cuts. It thereby acts, when properly regulated, as an effective hæmostatic agent. Incidentally its trajectory, because of the mechanical arrangement, is as straight and precise as though it travelled on rails.

In other words, 90 per cent. of prostatic encroachments, malignant or otherwise, and however dense, may be regarded as so much plastic material, to be removed seriatim by a loop charged with a new type of cutting current, upon the cutting effectiveness of which the presence of water seems to exert no discernible deterrent action.

The obvious interpretation is that thus equipped one may remould the prostatic urethra at will. This is borne out by the experience of my associates and myself in a large series of cases of all types, from the simplest fibrosis to advanced malignancies, and all degrees of urinary retention. Further, lest there be the slightest misapprehension, the assertion is here made that this procedure is more precise and more surgical than is that of open prostatectomy. It may further be added that adequate provision is made for any eventuality.

The rationale as I conceive it is, that here we have a tubular structure, the lumen of which is encumbered and distorted by irregular encroachments—that we should have tubular vision for its adequate comprehension—that our objective is, or should be, restoration of that lumen to normal or a moderate exaggeration of its normal tubular character. In other words, an operation of canalisation rather than excavation.

It has seemed to me inexpedient to involve this communication with technicalities. It is, however, reasonable to assume that if Caulk, Davis, myself, and others, equally competent, can effect by means of this route, with a negligible mortality, brief hospital domicile, minimal post-hospital morbidity, complete symptomatic relief, functional restoration, and relative permanency to date, in 90 per cent. of all types of prostatics, how much simpler will it be to apprehend such cases at their onset and prevent them from experiencing that period of senile travail, when their mental capacity is at its peak, and their physical resistance in decline? If internists and general practitioners will come to a realisation of the tremendous economical and sociological importance of the early recognition of prostatic obstructive manifestations, and see to it that they are corrected at their incipiency, the sequelæ of prostatism should no longer be a matter of common observation.

FOCAL SEPSIS AS A CAUSE OF NEPHRITIS

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BEFORE dealing with focal sepsis as an ætiological factor in nephritis it is, I think, necessary to make a few remarks in regard to the classification of diseases of the kidneys, and particularly to the term "nephrosis," which was introduced by Müller [1] in 1905, and subsequently approved by Munk,[2] Volhard and Fahr,[3] and others. Three years ago I suggested [4] that, from the clinical standpoint, it seemed difficult to justify this addition to the terminology of kidney disease; and since then Dr. Dorothy Russell,[5] in her excellent monograph on Bright's disease, has shown that, according to the histological evidence, the mild kind of toxic nephritis (mitis) may begin as a pure parenchymatous degeneration or nephrosis. It is well known, of course, that in cases showing both degenerative and inflammatory changes in the kidney even the expert pathologist finds it difficult to determine whether the primary lesion was a degenerative or an inflammatory one.

The modern conception of nephrosis is that of a primary degeneration of the renal tubules without any involvement of the glomeruli. Recently, however, Izod Bennett, Dodds, Robertson, and Baker [6] have suggested that many cases of secondary contracted kidney with death from uræmia may be the result of progressive changes in the glomeruli following severe damage to the tubal epithelium. This is apparently a new interpretation of the old idea that the large white kidney contracts down and becomes the secondarily contracted small white kidney. Clinically nephrosis is associated with much œdema and albuminuria, hypercholesterolæmia, normal retinæ and cardiovascular system, and no disturbance of renal function as estimated by the excretion of urea. Dr. Russell's recognition of nephrosis as a mild type of inflammation of the kidneys (nephritis mitis) again takes us back to the older view that cases with such symptoms are simply subacute manifestations of nephritis. I have, therefore, in this article made no distinction between subacute nephritis and nephrosis when discussing the ætiology and treatment of these conditions.

The term semi-chronic nephritis refers to the contracting stages between large white kidney (subacute nephritis) and small white kidney (chronic parenchymatous nephritis).

Ætiology of Nephritis

It can reasonably be held that there is probably a toxic factor at the root of all cases of Bright's disease. This is well seen in the acute types which follow the acute infective fevers, particularly scarlet fever and diphtheria. Damage to the glomeruli, followed by tubular degeneration, is also caused by the toxins of pregnancy and secondary syphilis, and by tonsillitis and certain chemical poisons. But what we fail, as a rule, to recognise is the fact that in those cases in which there is a transition to the subacute and chronic stages of nephritis there is often a secondary or residual focus of infection in the tonsils, antra, sinuses, teeth, or perhaps the intestines, which may account for the failure of the acute renal condition to subside completely. Moreover, cases of subacute nephritis with marked œdema and albuminuria,

and the semi-chronic varieties with less œdema and albumin in the urine, but with some urea retention and cardiovascular changes, are often the result of focal sepsis. These cases usually begin insidiously; their rate of progress varies and, unless the focus of infection is recognised and eradicated at an early stage, a progressive deterioration may occur which sooner or later ends in the death of the patient from pneumococcal infection of the œdematous tissues or from renal or cardiovascular failure.

From the point of view of organismal infection of the kidneys, Rosenow's work on the elective localisation of streptococci suggests that oral sepsis may be the focus of infection of bacteria having selective affinity for the urinary tract. Bumpus and Meisser [7] have described swelling and areas of hæmorrhage and necrosis in the medulla of the kidneys of rabbits after intravenous injection of streptococci from infected teeth or tonsils.

Hartzell and Henrici produced definite suppurative changes in rabbits after inoculation with streptococci, but did not describe anything indicating chronic interstitial nephritis. The presence of chronic inflammatory or degenerative changes, however, would necessitate a long-continued infection, which is difficult to produce in an animal; thus experimental evidence of toxæmic kidney is not very conclusive. In the course of research on streptococcal injections in rabbits, I found albumin in the urine of four of the animals which developed pyæmic joints but recovered under treatment with fixation abscesses.

The details are as follows:—

Rabbit 1.—Normal control—no albumin in the urine.

Rabbit 2.—Twelve months after intravenous injection of virulent hæmolytic streptococci: definite cloud of albumin found in the urine, both on boiling and after acidifying with nitric acid.

Rabbit 3.—Ten months after injection: a faint trace of albumin present; re-examination of the urine eighteen months later showed no albumin.

Rabbit 4.—Three months after injection: a cloud of albumin (0·15 per cent.).

Rabbit 5.—Three months after injection: a definite trace of albumin.

The effect of a toxin upon the kidney depends: (*a*) upon its virulence; (*b*) upon the length of time it continues to be excreted, and thus is able to excite degenerative or inflammatory reaction; and (*c*) upon the resistance of the kidney tissues to toxic action. Although the subacute type of nephritis is the more likely to result from a toxin of comparatively low virulence passing through the kidney over a prolonged period, it is possible that even the very chronic cases, which commence insidiously and do not appear in the consulting-room until marked contraction of the kidneys has occurred, may also be due to this cause.

If in a case of nephritis the tonsils or antra are found to be infected, and if these are promptly and efficiently dealt with by surgical means, a definite cure may result. I have also treated cases of œdema and albuminuria with vaccines made from hæmolytic and viridans streptococci obtained from the stools, but although temporary improvement took place there was always a return of the albuminuria. In all these cases, however, a further examination by the ear, nose, and throat department and by X rays showed infected tonsils or antra. These patients have since been operated upon, and the results obtained will be referred to later. Vaccine treatment is thus only worth trying in cases in which there is definitely no focus of infection in the mouth or sinuses or in which the removal of a focus of infection is an impossibility.

The following illustrates the course of a typical case of subacute nephritis which had become semi-chronic:—

CASE 1.—A girl, aged 16, was admitted to the Medical Unit wards of St. Mary's Hospital, suffering from marked general anasarca, distressed breathing, cyanosis, severe headache, frequent cough with clear sputum, and advanced cardiac failure. The history showed that she had been in good health until eight months previously, when her face became swollen. She was sent to bed by her doctor, but the œdema became general and a month before admission she developed headache, nausea and vomiting, and cough with expectoration which on one occasion was streaked with blood. When I saw her in hospital, her pulse-rate was 112, blood pressure 180/130, apex-beat 1″ external to mid-clavicular line in the fifth space, systolic bruit over mitral area, aortic second sound reduplicated, and lungs œdematous. Urine: albumin +++, and some blood present. Blood-urea 74 mg. per 100 c.cm. Urea-concentration test: maximum concentration 1·5 per cent. and minimum 1·5 per cent. Urinary chlorides content: 0·0936 g. per cent. NaCl. Thus the blood-urea was high, chlorides were retained, and there was moderate impairment of renal function as shown by the urea-concentration test; the high minimum concentration indicates that there was very definite retention of water as well.

Examination of her teeth showed advanced dental sepsis; pus exuded from the gums and, on extraction of the first left lower molar, pus was evacuated from the socket in quantity. Her sinuses were then radiographed, and marked opacity of the right maxillary antrum was found; this was due to the presence of pus and was drained by the extraction of a tooth. The œdema diminished on a diet containing full amounts of protein and the administration of 20 g. of urea every four hours, but her general condition was such that it was impossible to extract any more of her teeth or to deal effectively with the septic condition of her mouth and antrum. The result was steadily progressive changes in kidneys already badly damaged by long-continued excretion of virulent toxins, and a hopeless prognosis.

Towards the end she became more œdematous, and she died from cardiac failure a few weeks after admission.

Autopsy revealed hypertrophy and dilatation of the left ventricle, hypertrophy of the right ventricle, and cloudy swelling of the myocardium. Several small infarcts were found in the lungs. There were about eight pints of fluid in the peritoneal cavity, one pint in each pleural cavity, and ten ounces in the pericardial sac. The kidneys were slightly enlarged, pale, with small subcapsular hæmorrhages, and the cut surface was flecked with yellow in the intermediate zone. Microscopical examination showed a kidney of the semi-chronic type, a contracting stage between subacute nephritis and secondarily contracted small white kidney—the nephritis actis, in the intermediate stage, of Dr. Dorothy Russell.

I am of opinion that if a focus of infection had been sought for at an early stage of the disease, and, when found, had been suitably dealt with, this patient would have recovered. The history, treatment, and course of the next case show why, in my opinion, the discovery of focal sepsis is of such importance in kidney disease, especially in the œdematous cases which have been classified under the name "nephrosis."

CASE 2.—A woman, aged 46, was examined by her local doctor on June 1st, 1930, before her annual holiday; the doctor states that at that time she was quite fit and that her urine was normal, with no albumin in it. Five weeks later she came to the out-patient department complaining of swelling of her legs, and on examining her urine I found it contained albumin. There was no history of previous kidney disease. As her teeth and gums appeared to be healthy, I referred her to Mr. Cecil Graham for an opinion as to the condition of her throat and sinuses. Mr. Graham reported that the tonsils were small but septic, and that both antra were rather opaque—probably infected, and he decided to take her into his wards for operation.

She was admitted to St. Mary's Hospital on July 20th, 1930, but by this time the œdema had increased to such an extent that Mr. Graham did not feel justified in operating, and he transferred her to the medical side for preliminary treatment. On admission to the Medical Unit wards it was found that her legs, body, and face were extremely œdematous. Her urine contained albumin ++, and a little pus. The blood-urea was 17 mg. per 100 c.cm. The urea-concentration test was normal, the maximum concentration being 3·4 per cent. and the minimum concentration 1 per cent. There was a marked defect in water excretion, only 264 c.cm. of the 850 c.cm. taken being excreted in

four hours. The specific gravity, however, ranged from 1022 to 1005, and did not remain fixed in the vicinity of 1011, as occurs in the more chronic types of nephritis. The cardiovascular system showed no abnormality.

She was given a salt-free diet with full amounts of protein, and large doses of urea, 20 g. every four hours. The œdema completely disappeared after about a fortnight's treatment on these lines, and on Aug. 15th, she was sent home, as the ward was being temporarily closed. Ten days later, she was found to be more œdematous than ever, so much so that she was unable to wear her ordinary clothes, and she was readmitted in a dressing-gown. Another course of massive urea dosage, however, reduced the œdema again and on Oct. 8th, 1930, Mr. Graham performed tonsillectomy and washed out her antra. Swabs taken at the operation showed hæmolytic and viridans streptococcal infection of the tonsils, but no definite infection of the antra. She was discharged to a convalescent home and has made a complete recovery.

Her present condition is as follows: She states she feels perfectly well; there is no sign of œdema and no albumin, blood, caste, or pus in the urine; blood-urea 26 mg. per 100 c.cm. Urea-concentration test: maximum concentration 2·5 per cent.; minimum concentration 0·3 per cent. She passed 763 c.cm. of the 850 c.cm. of water taken in 6 hours. Heart and vessels normal. Blood pressure: 120 systolic and 82 diastolic. Fundi normal.

This is a classical example of what should be the course of subacute nephritis (nephrosis), but unfortunately the part played by the toxins of focal sepsis in the ætiology of some of the less acute types of nephritis is not as yet generally recognised. I feel convinced that a careful search for septic foci in the mouth, throat, and antra should be made as routine practice in all cases of nephritis, but particularly in the types characterised by much albuminuria and œdema. Moreover, the examination should be carried out by ear, nose, and throat and dental specialists, and radiographs of the sinuses and teeth should not be neglected. Until this is done and the focus of infection, if found, eradicated by surgical means, many cases such as the first one described will continue to go to the post-mortem room instead of to a convalescent home.

It is by no means uncommon also to find albumin in the urine of young persons who are being examined for life insurance or for posts in the Civil Service, banks, and other institutions. Usually there is no history of previous kidney trouble or any infectious disease to which the albuminuria can be attributed. Apart from functional albuminuria, a proportion of these cases may be due to focal sepsis, and no pains in my opinion should be spared to eliminate its possibility as an ætiological factor; failure to do so may result in some form of nephritis at a later date.

REDUCTION OF ŒDEMA BEFORE OPERATION IN CASES OF NEPHRITIS.

Massive doses of urea are necessary for this purpose, and can be given without any ill-effects. It is customary to give 20 g. every four hours until the œdema disappears. Experimenting upon a normal person I found that by giving 30 g. of urea every four hours for 12 doses the blood-urea rose from 28 mg. to 208 mg. per 100 c.cm. after the final dose, and fell to 54 mg. per 100 c.cm. 30 hours later. The amount of urine passed, on an average, in 24 hours, whilst taking this dosage was 3773 c.cm. (133 oz.)—nearly three times the normal output.

In Case 2 the patient took 20 g. every four hours and the blood-urea rose from the normal, 17 mg., to 122 mg. per 100 c.cm. after 11 doses, and fell to 36 mg. per 100 c.cm. 24 hours later. The output of urine was more than doubled during this time, and the œdema rapidly disappeared. Urea in large doses is undoubtedly the best medical method of treating marked œdema in nephritis.

FURTHER CASES ILLUSTRATING THE ASSOCIATION OF NEPHRITIS WITH FOCAL SEPSIS.

The following examples were taken from a series of 20 cases in which a routine search for focal sepsis was carried out, and in every one of which focal infection was found. The cases comprise acute, subacute, semi-chronic, and chronic nephritis. The results obtained by the removal of septic foci are briefly described.

CASE 3.—Acute hæmorrhagic nephritis. A boy, aged 2½ years. Admitted for sore-throat, due to septic tonsils, vomiting, and marked hæmaturia. Tonsillectomy performed. Three years later the patient was found to have no albuminuria or other sign of nephritis.

CASE 4.—Acute hæmorrhagic nephritis. Girl, aged 3½ years. Admitted for drowsiness, pallor, puffiness of the eyelids, and much blood in the urine. The tonsils were found to be septic and were enucleated. Examined after two years, the urine was normal and the patient had completely recovered.

CASE 5.—Acute nephritis. Boy, aged 4½ years. On the day before admission for removal of infected tonsils he developed swelling of legs and face. On admission: marked œdema of eyelids, abdomen, and legs. Enlarged inflamed tonsils and cervical adenitis. Urine contained 0·4 per cent. of albumin, some blood, and a few casts. Later, discharged to convalescent home without tonsillectomy, and with a little albumin in urine. A year afterwards there was no albumin in his urine, no casts, and he had apparently recovered without the removal of his tonsils.

CASE 6.—Acute nephritis. Girl, aged 11 years. History of a rash, headache, nausea, and drowsiness, five weeks previously, for which she was confined to bed for three weeks. On admission to hospital, on Dec. 14th, 1930, her face was pale and pasty and her urine contained blood and albumin. Renal tests showed normal kidney function. Tonsils enlarged and infected. Tonsillectomy performed on Feb. 22nd, 1931. A case possibly of scarlet fever followed by nephritis; the kidney condition cleared up and there were no signs of nephritis nine months after tonsillectomy.

CASE 7.—Acute nephritis. Girl, aged 9½ years. History of admission to hospital, in January, 1929, suffering from chorea; tonsillar enlargement was noted at the time. Admitted again in December, 1930, for headaches, puffiness under the eyes, and hæmaturia; she also had hyaline and granular casts in her urine, but her kidney function was normal except for some impairment of water excretion. Ten months later her condition was as follows: no œdema, 0·7 per cent. of albumin in urine, a few red blood corpuscles and pus cells, no casts. She refused to come into hospital for tonsillectomy.

Of the above cases of acute nephritis, three recovered completely after tonsillectomy. One has apparently recovered without operation, although he still had large and infected tonsils, and should be operated upon to prevent a recurrence of his nephritis. The other case has a history of tonsillar enlargement not operated upon, and still has some albumin and a few red blood corpuscles in the urine.

CASE 8.—Boy, aged 13 years. He was in hospital in 1927 with œdema and albuminuria due to subacute nephritis. In October, 1929, he still had œdema and 0·15 per cent. of albumin in his urine. No nitrogen retention, but water excretion was somewhat impaired; he passed only 545 c.cm. out of 850 c.cm. taken by mouth in four hours. His tonsils had been removed some years previously. A mixed streptococcal vaccine, prepared from the stool, was used for four months, and the albuminuria and œdema disappeared.

In February, 1931, the patient caught a cold and developed puffiness of the lower limbs; albumin in urine 0·05 per cent. Examination of nose and throat showed infection of the right antrum and a remnant of one of the tonsils. He was operated upon on March 19th, 1931, and six weeks later the œdema and albuminuria had cleared up again. He then developed boils, and a faint cloud of albumin appeared in the urine. A streptococcal vaccine cured the former, but a trace—0·02 per cent.—of albumin remained in his urine for some time. On Dec. 19th, 1931, his urea concentration and water excretion were normal, and he had no albuminuria, no casts, and no œdema. His general condition is greatly improved, and he is back at school.

CASE 9.—Semi-chronic nephritis. Girl, aged 17 years, attended out-patient department on Jan. 14th, 1930, and was found to have swelling of ankles and puffiness of eyes, and albumin in urine. She had been in bed for seven weeks in Princess Louise Hospital when five years of age, suffering from kidney trouble. Examination of her stools showed a mixed streptococcal infection; she received autogenous

vaccine treatment for six months and the albumin and œdema disappeared. Two months later a trace of albumin was again found in the urine and her nose and tonsils were examined by Mr. G. D. Robertson, who performed double antrotomy on Sept. 9th, 1931. There is now no œdema of eyes or legs, no albuminuria and no casts in the urine. Her blood pressure is 115/60, and she is back at work.

CASE 10.—Boy, aged 16 years. Admitted to St. Mary's Hospital on May 21st, 1929, suffering from subacute nephritis with marked œdema and albuminuria. His urea concentration was good, but of 20 oz. of water taken by mouth, 10 oz. were still retained at the end of ten hours, showing marked defect of water excretion. His blood pressure was 142/108, and there was accentuation of the aortic second sound. Stool examination showed hæmolytic, viridans, and non-hæmolytic streptococci in large numbers. An autogenous vaccine was injected for three months. During this time his urine contained a trace of albumin; his eyelids were slightly puffy, there was some anæmia and he was marked "unfit for school." As the improvement following vaccine treatment was disappointing, his nose and throat were examined and double antrotomy was performed in April, 1931. Condition on Sept. 30th, 1931, was as follows: No albumin or casts in urine; maximum urea concentration 2·6 per cent.; minimum 0·3 per cent.; water excretion good: passed 627 c.cm. out of 850 c.cm. taken by mouth in two hours. He has now no puffiness of eyelids or pitting along shins; has left school and is at work in a camera factory.

CASE 11.—Pyelonephritis. Woman, aged 29 years. History of nephritis of six years duration following pregnancy. Admitted on April 20th, 1931, for headache, drowsiness, œdema, dimness of vision, and abdominal pain. Blood pressure 232/190. Hæmolytic streptococci, pus, and albumin in urine. Blood-urea, 43 mg. per 100 c.cm. Maximum urea concentration 2·1 per cent., minimum concentration 0·4 per cent. Water excretion somewhat impaired—passes only 24½ oz. out of 30 oz. of water taken by mouth in six hours. Tonsils which showed marked infection, were removed on May 21st, 1931.

Six months later, cardiac hypertrophy and accentuated aortic second sound present. Blood pressure 228/155. Considerable anæmia. Urine 0·05 per cent. of albumin; a hyaline cast and a pure growth of streptococci of fæcal type were found. She also has uræmia dyspnœa at night and there has been no improvement in her condition following the tonsillectomy and subsequent vaccine treatment. Improvement in this case, however, was not to be expected in view of the fact that the kidneys had been affected for six years and nothing had apparently been done, until her admission to this hospital, to eradicate either the tonsillar or the urinary infection, by which time serious renal involvement had occurred.

CASE 12.—Chronic nephritis, woman, aged 24 years. History of diphtheria eleven years ago, followed by kidney trouble, for which she had been detained in hospital for five months. Œdema and albuminuria occurred after childbirth a year ago. Admitted to hospital six months later with albumin, blood, and hyaline casts in urine. Blood pressure 130/90. No œdema. Renal function tests showed no nitrogen retention but some defect in water excretion. Tonsils enlarged; hæmolytic and viridans streptococci found on culture of swabs. Some dental sepsis present. Tonsillectomy performed. Six months later kidneys showed normal renal function, but there were still some albumin and a few hyaline and hyalogranular casts in the urine.

This is another case in which the tonsillar infection was of long standing, the kidneys becoming progressively damaged; the response to tonsillectomy was thus not so marked as in cases of more recent origin, treated by the removal of septic foci.

CASE 13.—Semi-chronic parenchymatous nephritis. Married woman, aged 34 years. Induction of labour in January, 1930, because of albuminuria and œdema. Admitted to St. Mary's Hospital on June 2nd, 1930, suffering from slight œdema of face and legs. Albumin 0·4 per cent., blood pressure 145/98. Blood-urea 48 mg. per 100 c.cm. Maximum urea concentration 2·5 per cent. Minimum concentration 2·1 per cent. Volhard's water test showed marked retention, only 267 c.cm. out of 850 c.cm. taken by mouth being excreted in four hours. On Feb. 27th, 1931, she still had œdema of her legs and 0·35 per cent. of albumin in her urine. As her condition was not improving, her tonsils, which were found to be infected, were enucleated, and the antra cleared. When seen six months later she had a trace of albumin in the urine, and some œdema of her legs, but she was back at work.

CASE 14.—Semi-chronic nephritis. Woman, aged 41 years. History of dental trouble and bleeding from the gums. In November, 1929, a six and a half months' pregnancy was terminated in Queen Charlotte's Hospital because she became "unconscious." Admitted to St. Mary's Hospital in December, 1930, for headache, dyspnœa, anæmia, general weakness, and some œdema of the legs. Is very deaf. Blood pressure 210/110; heavy cloud of albumin in urine. Maximum urea concentration 3·4 per cent. and minimum 1·7 per cent. Volhard's water test showed some inefficiency of the kidneys. She only passed 640 c.cm. out of the 850 c.cm. taken in six hours. Blood-urea, 41 mg. per 100 c.cm. Hæmolytic and viridans streptococci found in the throat and the hæmolytic variety in the fæces. Both tonsils and antra were infected. Tonsillectomy performed on Feb. 25th, 1931, and antra cleared up.

Oct. 7th, 1931. Her general condition since the operation remains much the same. She still has marked secondary anæmia. The urine contains a faint trace of albumin and one hyalo-granular cast was found. Maximum urea concentration 2·7 per cent. and minimum 0·4 per cent. She passed 564 c.cm. out of 850 c.cm. of water taken by mouth in two hours, which is about the normal amount for the time, and compares favourably with the findings in December, 1930. This patient, in common with many other cases of nephritis following pregnancy, had a definite infection of tonsils and antra; moreover, the response to operative treatment, because of long-continued damage to the kidneys, was not nearly so marked as in early cases, particularly in non-pregnancy ones.

It is probable that focal sepsis plays a definite part in the ætiology of the nephritis associated with pregnancy, even if it is not the actual cause of the condition; thus it should be sought for in the early stages of pregnancy with albuminuria, and, what is more important, eradicated if found. Although in antenatal clinics it is, no doubt, customary to have a look at the throat and teeth, this in itself is not sufficient; the examination should be carefully carried out by ear, nose, and throat, dental, and radiological specialists. It is comparatively easy to miss small infected tonsils, sepsis at the apices of the teeth, and antral infection. One case I sent to the ear, nose, and throat department for examination showed only a slight dimness of the right antrum on transillumination; this was confirmed on radiography, but it was not considered that there was sufficient evidence of infection to justify operation. On opening the antrum, however, it was found to be full of pus, the explanation being that the antrum discharged itself from time to time and that it was empty at the time of the X ray examination.

Vaccine Treatment in Nephritis

Vaccines should be tried only in cases in which surgical interference is impossible—e.g., in streptococcal excess in the intestinal canal. The streptococci of pathological significance are usually the hæmolytic and viridans varieties. Streptococci may also be found on culturing catheter specimens of the patient's urine. In most cases, however, the urine proves to be sterile. The presence of an organism, moreover, is usually the result of contamination. A negative finding does not imply the absence of nephritis, because the damage to the kidney is due, as a rule, to a toxin and not to the direct action of the organism.

The dosage of vaccines is important: one should begin with 0·1 c.cm. of a vaccine containing 5,000,000 organisms in each c.cm., and work up, at five- to seven-day intervals, to 1 c.cm. of a preparation containing 500,000,000 organisms in each c.cm. A local reaction at the site of injection, an increase of albumin or blood in the urine, or a general reaction with malaise and headache, are indications for cutting down the dosage.

Vaccines have no effect in clearing up septic foci in the tonsils, sinuses, or sockets of the teeth; in these conditions an operation is essential. Moreover, the results obtained from the injection of vaccines prepared from stool cultures tend to vary so greatly that it is impossible to venture an opinion as to their

real value. If a patient is treated with vaccines and the condition fails to respond, a further search should be made for dental, tonsillar, and sinus infection, and should include radiographic examination if these have not been made previously. As a last resource, the stools may be re-examined, because the disappearance of one type of streptococcus may result in the growth of another strain which has been kept down by the original organism; a fresh vaccine containing this strain would then be required for a further series of injections.

The comparative failure of vaccine therapy is one of the great tragedies of medicine, but we have not as yet, I think, touched the fringe of this type of treatment.

Comments

1. It is an accepted fact that tonsillitis is a cause of acute nephritis. Paterson and Wyllie [8] have shown that 85 per cent. of cases of acute hæmorrhagic nephritis in children are due to tonsillitis or associated conditions, such as cervical adenitis and otitis media; the causal organism is usually the streptococcus, although the staphylococcus and pneumococcus are sometimes found. Acute nephritis, moreover, is very common after scarlet fever and diphtheria, conditions in which infection of the throat is one of the most prominent symptoms.

2. I have tried to show in this article that in the vast majority of cases of nephritis of various types it is possible to demonstrate well-marked infection of the tonsils, antra, teeth, &c.; this is particularly the case in subacute nephritis with much œdema, and it is in these patients too that early removal of focal sepsis appears to give the best results.

3. If the kidneys are badly damaged by the long-continued excretion of a more or less virulent toxin, a surgical operation, by removing the source of the latter, may tend to slow down the progress of the disease; but the best results are obtained when the tonsillar or other infection has been searched for and eradicated at a very early stage.

4. In the very chronic cases of nephritis with high blood pressure—200 mm. of mercury or more—even if infection is discovered, it is questionable whether the benefit obtained is sufficient to justify the risk of surgical interference. One of the above patients with a blood pressure of 210/110 mm. of Hg took a general anæsthetic well during tonsillectomy, but two months later, when having some teeth extracted, collapsed during gas.

5. It is suggested that specialist examination of the tonsils and antra be undertaken at the earliest moment in all cases of pregnancy in which albumin in the urine or other signs of nephritis appear, also in post-scarlatina, diphtheria, and other conditions in which residual tonsillar or associated infections tend to occur. Moreover, if focal sepsis is discovered it should be removed at once, as a precaution against the possibility of subacute or chronic nephritis later.

I am greatly indebted to Prof. F. Langmead for suggestions in regard to the relationship of focal sepsis to nephritis.

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THE MENOPAUSAL AGE AND MAMMARY CARCINOMA

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MUCH experimental work has been done in an attempt to define the relation of normal mammary growth and functional activity to the influence of ovarian and other growth factors. In the human subject, histological and clinical evidence show this interdependence at all stages of the mammary life-cycle, from the initial formation of the organ before birth, through the growth activity of puberty, pregnancy, and lactation, and at the period when atrophy of glandular structure is associated with the subsidence of the reproductive function. But when abnormal growth or tumour formation, and especially carcinoma of the breast, is in question, curiously little attempt has apparently been made to correlate such pathological activity in the mamma with disordered function of the growth stimuli which produce and maintain its normal condition. Most experimental work has been an effort to establish some connexion between tumour growth and more or less extraneous factors, such as inflammatory and irritative processes, stasis of secretory or other products, and like conditions.

It is, of course, obvious that much difficulty lies in the way of estimating such correlation in the human subject, but it seems possible that more progress might be made in elucidating and defining the factors which lead to the development of tumours in the breast, if these growths were regarded, not merely as surgical emergencies needing appropriate local treatment, but as manifestations of a wider derangement in the organism. If this were so, the pathologist and the statistician might be provided with data which would assist in histological interpretation, and which would go towards building up simple but important physiological generalisations on the interrelations of the commencement, continuance, and cessation of activity of glandular organs. It would be helpful in the attainment of this object to have on record the marriage state, the number of children, if any, whether they were nursed, any further details of the lactation history, and the length of time which had elapsed since the last lactation. These latter questions have an obvious bearing on the possibility of retention of secretion in the glandular tissue, and the part this may play in the production of benign or malignant growths. Even more helpful would be information with regard to gynæcological function and, if the patient is older, the age of the menopause and any disturbance associated with it. The absence of information with regard to these last questions is almost general, and is the more surprising when it is remembered that all statistics of the age range of malignant development in the breast associate the emergence of mammary carcinoma, in the great majority of cases, with the menopausal or post-menopausal period.

AN INVESTIGATION OF AGE-INCIDENCE.

During a study of normal mammary histology, in association with the late Prof. Lorrain Smith, the idea of trying to connect more definitely the menopausal period with pathological growth in the mamma

suggested an investigation into a number of histories which might provide some more exact information regarding the age range of the menopause in women. The collection of these statistical data had in view the determination of (1) the frequency distribution of the menopausal ages, and (2) the correspondence of this with the ages at which mammary cancer makes its appearance. In the latter case, the age-period is known to be more or less coincident with that of the menopause. There is, however, in the first place, insufficient knowledge of what the age at the menopause may be, and in the second place, it would be of some interest to show how far cancer in an organ such as the mamma, with its close hormonic connexion with ovarian and uterine activity, runs parallel in regard to age-incidence with that of the menopause.

The investigation was carried out on the surgical side of a women's hospital, where gynæcological data are taken as a routine part of the patient's history. The age of the menopause was therefore available in almost all cases where the period had been completed. The conditions for which patients had entered hospital included the usual wide range of surgical lesions, with a preponderance of gynæcological disorders. A series of 300 histories of patients past the menopause was studied, but 56 cases of intermenstrual hæmorrhage and other uterine disturbances which made the time of the menopause uncertain have been excluded. This left 244 cases, a small number of the total available, but one considered sufficient for a preliminary statistical survey and for comparison with a series of malignant breast cases, which numbered 343.

The figures for the two series are as follows: those belonging to the first series of 244 cases, in which the year of the menopause was under examination, are entered in the second column (Mnp.); those of the series of 343 malignant breast cases, giving age at time of operation, are entered in the third column (Mlg.).

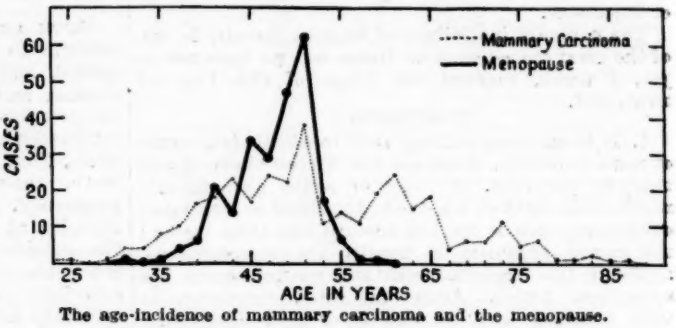
Age.	Mnp.	Mlg.	Age.	Mnp.	Mlg.	Age.	Mnp.	Mlg.	Age.	Mnp.	Mlg.
23	0	1	39	4	10	55	1	7	71	0	0
24	0	0	40	14	12	56	1	6	72	0	6
25	0	1	41	7	6	57	0	5	73	0	5
26	0	0	42	7	9	58	0	12	74	0	4
27	0	0	43	7	14	59	1	7	75	0	1
28	0	1	44	14	7	60	0	14	76	0	5
29	0	0	45	20	10	61	0	10	77	0	1
30	0	2	46	13	12	62	0	7	78	0	1
31	1	2	47	16	12	63	0	8	79	0	0
32	0	3	48	24	19	64	0	9	80	0	1
33	0	1	49	23	13	65	0	9	81	0	0
34	0	0	50	52	30	66	0	3	82	0	2
35	1	8	51	10	8	67	0	1	83	0	0
36	2	5	52	10	7	68	0	4	84	0	1
37	2	5	53	7	4	69	0	2	85	0	0
38	2	6	54	5	7	70	0	6	86	0	1

The graphs of these figures are here illustrated, the numbers being grouped in two-year periods; thus the age-period extending from the completion of the thirtieth year of age to the completion of the thirty-second year is called on the graph 31 years. However grouped—in two-year, three-year, or five-year periods—the maximum incidence, both of the completed menopause and of the emergence of malignancy in the breast, lies in the five-year period, 48 to 52 years inclusive, with the peaks close together and on the same ordinate. The wide range of the menopause—29 years—is to be noted.

WIDE RANGE OF THE MENOPAUSE.

Several facts emerge from a study of the histories which provided the menopausal figures.

1. The usual period given for the completion of the menopause is between 40 and 50 years, with the maximum incidence between 45 and 48 years, but a wider range of variation in the age—from 30 to 59 years—is brought out by these figures. This result



The age-incidence of mammary carcinoma and the menopause.

suggests that, in the absence of detailed data, the conclusions to be drawn regarding the histological appearances in the breast, the relation of cancer to involution at the menopause and so on, should be strictly qualified. The actual age of a patient may be less accurate than the age of the menopause, as an index of mammary atrophy. It is frequently stated in the literature, for example, that cystic disease of the breast occurs, in the majority of cases, at too early an age to be associated with menopausal disturbance, but in the light of these figures such a statement has little validity unless menopausal data are also available.

2. The earliest age in the series at which the menopause was completed is 31 years. This patient, aged 56, came to hospital with intestinal carcinoma. She had two children, the younger aged 25. Since the birth of this child, when the patient was aged 31, she had never menstruated again. The birth was normal, and as she was otherwise quite well, she thought it unnecessary to seek advice. I have come across a number of references in the literature to the occurrence of the menopause before 35 years; Bloodgood [1] mentions a case, also at 31 years, in a nullipara, and associates such early atrophy with absence of pregnancy and lactation. The patient with the menopause at 59 years, the latest in the series under review, came into hospital for a prolapse of 12 years' duration. She had had ten children, and a miscarriage when she was 54 years old. An extraordinary case of prolongation of menstrual life, reported recently by Andrew,[2] may be mentioned here. One of his patients, an old lady of 80 years of age, "first started to menstruate at the age of 12. She is married, and has had eleven living children, three stillborn, and four miscarriages. Her last was born when she was 46 years of age. Since then she has been absolutely regular . . . up to about five years ago." The periods were still quite regular (at the age of 80) though diminishing in duration.

3. The menstrual irregularity which precedes the completion of the menopause in the series extends from a few months to five years; from one to three years is not unusual. This is not in accord with the observation frequently met with in the literature that the climacteric in women, in contrast with the

similar period in men, supervenes more or less rapidly. Walker,[3] for example, states that "in the case of woman, the ovaries pass from full activity to complete cessation of function in the course of a few months; in man, the process of genital extinction may be spread over several years." The duration of this menstrual irregularity associated with subsidence of ovarian activity suggests that the process of involution in the breast may also, in certain cases, be uneven, variable, and protracted. This possible instability or "physiological unrest"[4] may have a bearing on mammary pathology, especially when it is remembered that the majority of cases of carcinoma emerge at the same age-period as that of the completed menopause. It would be interesting to have a frequency distribution of the duration of the menopause.

4. It is often stated that the menopause is earlier if lactation hypertrophy has not taken place; various generalisations are also made regarding the association of pathological growth in the breast with such conditions as the absence of pregnancy, the absence of lactation or its curtailment, and the rapidity of successive pregnancies; but it appears from the histories in this small series of 244 cases that such statements need more investigation before they can be accepted. So far, no obvious relation is revealed by these cases between (*a*) the number of pregnancies and the age of the menopause; (*b*) the absence of pregnancy and an early menopause; (*c*) the age of puberty and the age of the menopause; and (*d*) the interval between the last pregnancy and the age of the menopause. The establishment or denial of any correlation between these data needs the examination of a larger series of cases, and these, it is hoped, will be available for a later investigation.

CONCLUSION.

In this short study I have endeavoured to make a simple survey of the duration of the menopause, and have set up in parallel the frequency distributions of the menopause and the age-incidence of cancer of the breast. I may be permitted to conclude from my figures that—

(1) The age-distribution of the menopause, as shown in this series of cases, has a longer range and frequency than is commonly allowed.

(2) The figures representing the age-distributions of the menopause and the incidence of cancer of the breast are not inconsistent with the hypothesis, suggested also by other considerations, that a correlation exists.

My acknowledgments are due to the British Empire Cancer Campaign, with whose assistance I am engaged on a general investigation on mammary carcinoma, and to the honorary surgical staff of the Bruntsfield Hospital for Women and Children, Edinburgh, for access to their case records.

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ENLARGEMENT OF GOSPORT WAR MEMORIAL HOSPITAL.—Mr. A. M. Williams, county director of the British Red Cross Society, recently opened considerable extensions of this hospital. They include a new wing, bringing the number of beds up to 42, with two sun wards, a new out-patients' department, a greatly improved and enlarged X ray department, and additional domestic accommodation. The night nurses' bedrooms have been made sound-proof.

Clinical and Laboratory Notes

PULSATING EXOPHTHALMOS DUE TO SPHENOIDAL SINUS MUCOCELE

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ABOUT two years ago a man, aged 32, was referred to me for treatment.

History.—In 1922 he had noticed bulging of his left eye, which got gradually worse, but no doctor was consulted until 1925. His medical adviser then sent him to hospital, where—according to his statement—he was radiographed and a Wassermann test was made, both with negative results. An orbital tumour was diagnosed and he was asked to attend hospital so that he could be kept under observation, but he failed to do so.

There was no impairment of vision until 1928, when the sight began to grow dim and the eye to protrude considerably. A dull pain was experienced over the left frontal region. Suddenly one day there was a profuse discharge of about an egg-cupful of thick, brownish fluid from the left nostril; this lasted about half an hour, and was followed by a certain amount of relief; the eyeball receded considerably, and the sight improved. The next day he saw his oculist, who recommended another X ray photograph. This suggested disease of the left ethmoidal region, but unfortunately only an antero-posterior picture was taken. Under an anæsthetic a large quantity of fluid, like that which came from the nose, was aspirated by plunging a long needle through the inner conjunctival fornix. This fluid was examined microscopically but revealed nothing of note. After this treatment the eye condition remained stationary for a short time, and then gradually the aforementioned symptoms and proptosis began to get worse. The patient became alarmed about the sight of his eye. It was in 1930, just 12 months later, that he was referred to me.

Condition on Examination in January, 1930.—The left eye was pushed forwards, downwards, and outwards, and was very tense; there was no narrowing of the palpebral fissure, or any signs of swelling beneath the supra-orbital margin. The eye symptoms complained of were practically nil, with the exception of slight dimness of vision. There was no diplopia. Examination of the nose revealed nothing very much except that the mucous membrane over the outer wall of the left nostril (the affected side) seemed rather atrophic.

I made a diagnosis of mucocele of a posterior orbito-ethmoidal cell or sphenoidal sinus for the following reasons: (1) long history; (2) absence of any inflammatory symptoms or signs; (3) the very great extent to which the eyeball was pushed forwards, together with the absence of any swelling in the supra-orbital region; (4) the slight dimness of vision, which could be caused by pressure on or stretching of the optic nerve; (5) the previous discharge of thick, brown, viscid fluid from the left nostril.

I decided to explore the ethmoidal and sphenoidal regions endonasally.

First Operation.—Without the slightest resistance the punch forceps went through the anterior and posterior ethmoidal cells, and it was only when the sphenoidal sinus was reached that a small quantity of thick, brown fluid, such as one sees in a mucocele, was found. I did not find anything like the amount I expected, and I did not feel satisfied with the result of the operation. There was a slight discharge for 10 or 12 days, and for a time there was some slight amelioration of the symptoms.

In May, 1931, I saw the patient again and he was very much worse. The eye was proptosed to an alarming extent and he could not quite close the lids. The dimness of vision was slightly more pronounced,

and a dull pain in the occipital region was felt, especially on moving the head quickly. Distinct pulsation was felt in the eyeball, though it was not visible. The patient felt rather nervy, and the condition was evidently beginning to tell on his general health. An external operation was the only thing, and I decided on this at once.

Second Operation.—I made an incision starting from the inner part of the supra-orbital margin, down the side of the nose, and continued into the vestibule. With a bone-cutting forceps I then removed part of the nasal bone and frontal process of the superior maxilla opening the floor of the frontal sinus. I then proceeded to remove the inner wall of the orbital cavity from before backwards, having first separated the mucous membrane of the outer wall of the nose from the bone so as to lessen the hæmorrhage. I had to be very careful of the structures in the orbital cavity, and I was particularly frightened of damaging the optic nerve which I knew must be stretched and attenuated.

Nothing abnormal was encountered until I came on what I believed might be the optic nerve, and then, without any warning, a column of dark reddish-brown glairy fluid shot right out of the back of the orbital cavity. The first impression one got was that an aneurysm had been opened. The pulsation was very marked, and the fluid filled the entire operation area. After several minutes of diligent swabbing the roof of the left sphenoidal cavity and posterior part of the orbit were found to have been absorbed and a large portion of the dura exposed. The contents of the mucocele had spread into the posterior part of the orbital cavity, and evidently passed backwards beneath the dura at the base of the brain. This extensive exposure of the dura, together with the fact that the large vessels and cavernous sinus were in close proximity to the mucocele, accounted for the abnormal pulsation. Working in such a dangerous area, I did not explore or do more than was absolutely necessary as soon as I was sure that I had ensured adequate drainage. I packed the entire cavity with iodoform gauze, bringing the end through the anterior nares, and stitched up the external incision with the exception of the inner angle of the eye, where I put a thin rubber tube to drain that area, the other end protruding at the nostril.

Course of Case after Operation.—After 24 hours I removed the gauze packing and washed out the nose twice daily with alkaline lotion. I put the patient on urotropine grs. 10 thrice daily for the first ten days. On the third day the temperature began to rise, and with slight remissions remained about 103° F. for seven days. The discharge was scanty; there was a fair amount of headache and dimness of vision became rather more pronounced. As was to be expected, there was considerable œdema of the left eyelid, which was entirely closed for several days. About the sixth day a large clot was removed by syringing from the operation area, through the nose; the discharge became more abundant, containing a large proportion of pus. The temperature began to drop, headache disappeared, and orbital swelling and œdema diminished. The vision, though still hazy, improved considerably. I removed the tube from the frontal region as soon as the discharge ceased, which was about the ninth day, and the external incision healed rapidly.

I saw the patient at intervals of a month afterwards, the proptosis getting less each time. The last time I saw him he was feeling quite well, back at his work, and the eye was almost normal in position. His sight had practically recovered, though he was wearing glasses on the advice of his oculist.

COMMENT.

The diagnosis of sphenoidal sinus mucocele presents some difficulty since, owing to the deep position and varied anatomical structure and size of the sinus cavity, the disease may lie latent for several years. Should any part of the bony walls be destroyed, the implication of important nerves and vascular structures makes the diagnosis still harder. The extensive absorption of bone in the case described above, and the considerable area of dura exposed, together with the close proximity to the large vessels and sinuses, gave the feeling of pulsation to the proptosed eye. A pulsating exophthalmos is usually due to an aneurysm but in this case the character of the pulsation, the long history of the case, and the absence of any marked symptoms such as headache, pain, and ocular symptoms, coupled with the previous discharge of fluid from the nose and the radiographic findings, made the diagnosis of mucocele certain.

The dimness of vision was due to the fact that the mucocele had invaded the posterior part of the orbital cavity, and not only caused pressure on the optic nerve, but stretched it considerably by pushing the eyeball forward. It was surprising that the sight was not irreparably damaged, considering the extreme proptosis and the large amount of fluid present, with the extensive absorption of bone.

While mucoceles are common enough in the ethmoidal cells, they are very rarely found in the sphenoidal sinus. StClair Thomson, in his text-book on diseases of the nose and throat, says that one case was reported by Hajek, of Vienna, while other standard text-books on the subject do not even mention the condition.

I wish to thank Dr. Margaret Dobson and Mr. Graydon Hume, both of whom first saw the case and then referred the patient to me for treatment. I am also indebted to Mr. Buckland Jones, who kindly assisted me at the second operation.

ELECTROCARDIOGRAMS OF TWO PATIENTS DURING ATTACKS OF ANGINA PECTORIS

BY DONALD HALL, M.D. CAMB., F.R.C.P. LOND.,
PHYSICIAN TO THE ROYAL SUSSEX COUNTY HOSPITAL, BRIGHTON.

THESE two cases confirm the findings of Parkinson and Bedford in their paper in THE LANCET of Jan. 3rd, 1931.

CASE 1.—A man, aged 72, gave a history of chest pain on exertion for some seven years. An interesting feature was that frequently he could walk quite well in the morning but could not take exercise in the afternoon without producing the pain. There was a long history of indigestion, he had a mouthful of septic teeth, and was himself insistent that his pain had no relation to his heart but was dyspeptic in origin. He was seen on Nov. 6th, 1931, in consultation with Dr. Greville B. Tait, of Handcross.

On my arrival the patient had an attack of pain radiating down both arms, and the first electrocardiogram was taken while this pain was at its height. There is contralateral RS–T deviation in leads I. and III., downward distortion in lead I. and upward in lead III. In addition, rhythm is interrupted by premature beats of auricular origin. The patient was given trinitrin, and the second electrocardiogram was taken half an hour later when he was free from pain. In it the RS–T deviation has practically disappeared, rhythm is uninterrupted, and the complexes are of lower voltage than in the electrocardiogram taken during the anginal attack. A curious feature is that what little distortion is evident in lead II. in the first electrocardiogram (Fig. 1) resembles that of lead I., while in the second (Fig. 2) the distortion follows that of lead III. This patient had clinical evidence of organic disease in raised blood pressure, enlargement of the heart to the left, and albuminuria, but as he himself was

obstinate in refusing to accept the cardiac explanation of this pain it was fortunate that we were able to obtain confirmation of the clinical diagnosis by the opportunity of electrocardiographing him during an actual attack.

CASE 2 was a man of 57 who was sent to me on Dec. 8th, 1931, by Dr. H. A. Whyte-Venables, of Pulborough. Two years previously he had had a "nervous breakdown," and since that time had suffered greatly from flatulence. All his teeth had been extracted, and he had had various treatments, all without benefit, the fact being that he was a confirmed wind-swallower. Thirty years earlier he had been told that he had heart trouble, and in March, 1918, he had been put in Category C3, and told that he had a murmur. There was a history of chest pain for over a year, the pain being referred over a wide area and, when severe, radiating down the arms, but although in the main it was provoked by exertion, such as walking uphill and kick-starting his motor-bicycle, he had been able to carry on with his employment as an insurance agent. When I saw him his eructations were loud enough to be heard in the street. He had a short apical systolic murmur, not conducted outwards, and the apex was in the fifth space, only 4 inches from the midsternal line. His blood pressure was 166/90. Over the aortic area there was a very loud and harsh systolic murmur conducted upwards into the neck and heard over a wide area but not accompanied by thrill. While I was electrocardiographing him he informed me that he had his pain at the time.

FIG. 1. FIG. 2. FIG. 3. FIG. 4.

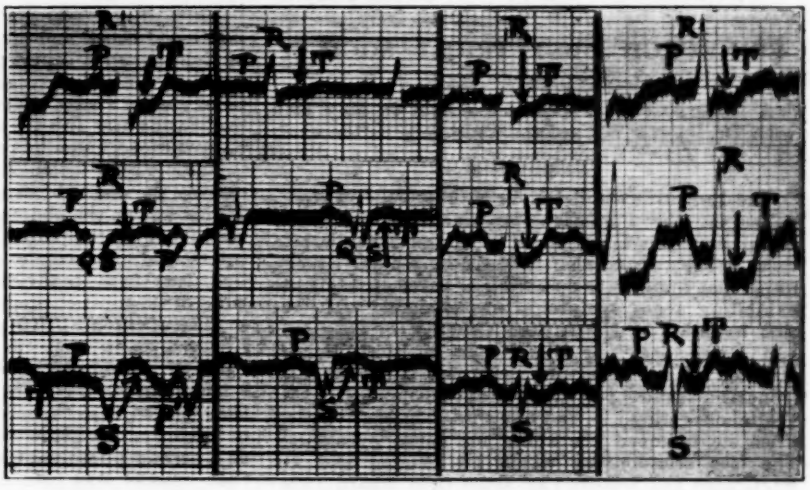
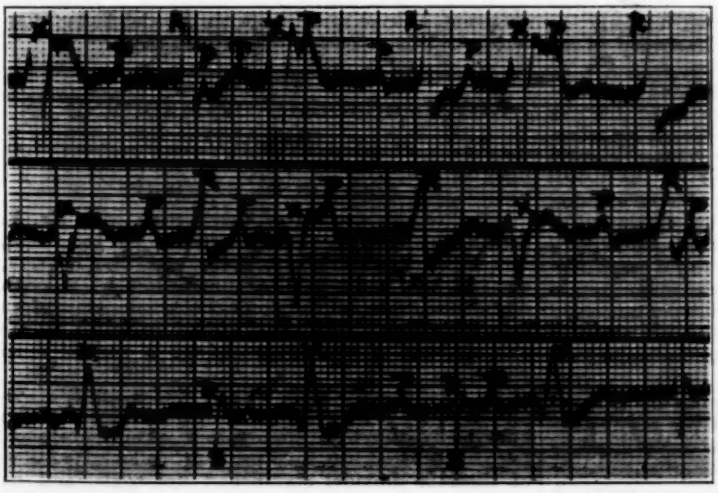


FIG. 1 (Case 1).—Taken during anginal attack. R–T depression in lead I. S–T elevation in lead III. Rate 96. Rhythm interrupted by ectopic beats of auricular origin.
FIG. 2 (Case 1).—Taken half an hour after anginal attack. RS–T distortion much less, rhythm uninterrupted, voltage of RS waves lowered.
FIG. 3 (Case 2).—Taken during anginal attack. R–T depression in all leads. Rhythm regular. Rate 120.
FIG. 4 (Case 2).—Taken during anginal attack with very severe pain. R–T depression deeper than on previous occasion and RS waves of higher voltage.

The electrocardiogram (Fig. 3) shows RS–T distortion with the deflection downwards in all three leads. Later, during my clinical examination, pain returned, and on this occasion he stated that it was much worse, worse indeed than he had ever known it. At the same time he was voluble, his colour did not change, and there was nothing about him to denote suffering. I took the opportunity of obtaining a second electrocardiogram during this attack. The curve is of the same type but with extreme exaggeration of the distortion (Fig. 4).

FIG. 5.



CASE 2.—Taken in terminal stage of illness. × × × = Right ventricular ectopic beats.

I saw this patient again on March 23rd. His progress had been steadily downwards, and on March 10th he had a severe attack of pain lasting 36 hours with collapse, vomiting, fall in blood pressure, and subsequent pyrexia. When seen he was orthopnœic, and that morning had had hæmoptysis for the first time, evidently from an infarction of the left lower lobe. The cardiac rhythm was interrupted by premature beats, and an electrocardiogram (Fig. 5) taken at the time showed every alternate beat to originate in an ectopic focus in the right ventricle and complete dissociation of auricles and ventricles. He died on March 27th.

Neither of these patients had been taking digitalis or any drug of the digitalis group.

MEDICAL SOCIETIES

EDINBURGH OBSTETRICAL SOCIETY

A MEETING of this society was held on May 11th, with Dr. JAMES YOUNG, the President, in the chair.

Salpingitis

The PRESIDENT and Dr. T. N. MACGREGOR read a paper on the Palliative Treatment of Salpingitis based upon an analysis of 55 consecutive hospital cases. They stated that it was now generally recognised that immediate operation in cases of salpingitis exhibiting acute symptoms was attended by grave risk to life. At the British Congress of Obstetrics and Gynæcology at Manchester in 1927 Hendry reported 24 operations on acute and subacute cases (gonorrhœal and septic) with nine deaths, and Beckwith Whitehouse stated he had lost three consecutive cases when he removed the tubes for acute pyosalpinx. The last occasion on which Dr. Young and Dr. MacGregor had removed an acute tube was in 1924; the patient died two days after operation. Since then all their cases had been treated palliatively with no hospital mortality. In the present series of 55 cases 51 were admitted with acute or subacute symptoms. In three cases the abdomen was opened to eliminate the possibility of acute appendicitis or tubal pregnancy and as acute inflammation of the tubes was found the abdomen was closed without interference with the inflamed area. In four other cases a pelvic abscess was evacuated by posterior colpotomy. Otherwise the treatment was palliative, consisting of rest in bed, hot fomentations to the abdomen, and morphia. In 10 out of the 51 cases readmission for recrudescence of the symptoms was necessary, and in two of these extirpation of chronically diseased organs was later carried out. Of those cases treated palliatively which were followed up 90 per cent. were found to have made a complete or adequate spontaneous clinical recovery. These findings confirmed the observations of Curtis and Hendry who in cases of acute salpingitis treated entirely on palliative lines obtained a clinical recovery in 90 and 91 per cent. respectively.

Dr. Young and Dr. MacGregor pointed out that expectant treatment, besides safeguarding life, as a rule gave the best chance of functional recovery, since operation during the acute phase usually revealed such extensive involvement of the pelvis that eradication was possible only by drastic excision of the organs. By expectancy the organs were conserved and on these, if necessary, plastic surgery could at a later date exercise its ingenuity if pregnancy was desired. In this connexion it was important to find that functional recovery occurred spontaneously in a number of cases. In five, or 12·8 per cent., of their series there was a pregnancy after discharge from hospital.

Dr. FARQUHAR MURRAY (Newcastle-upon-Tyne) read a paper in which he discussed the insufflation test and considered that it should be made in every case of sterility, especially if there was an antecedent history of pelvic inflammation. He considered it was important to insufflate while performing a salpingostomy, not only to prove patency but by dilating the tube to facilitate the incision. Proof of patency of one tube made a laparotomy unnecessary. The test was reliable but not infallible. The occasional fallacies were shown by X ray examination after injecting lipiodol. There was a definite risk of peritoneal shock and air embolism, but little, if any, of lighting up a septic process in the tubes or peritoneum. Insufflation gave no clue to the site of blockage in cases with sealed tubes. Both the insufflation test and the injection with lipiodol should be performed under anæsthesia.

Radiography after injection of lipiodol showed exactly the site of blockage in cases with sealed tubes. If this was at the abdominal end of the tube the case was ideal for salpingostomy, but if it was at the interstitial or isthmic portions of the tube then operation was inadvisable. Injections of lipiodol were of diagnostic, prognostic, and therapeutic value in cases of chronic pelvic pain. This applied especially to those cases with no palpable evidence of tubal mischief. The injection often made the pain worse for a period and in a certain number the X ray examination showed that the injection did not enter the tube, or having entered failed to reach the peritoneal cavity; or a second photograph taken 24 hours later showed that lipiodol was held up in a loculus in the tube. In a normal case there was no definition of shadow—merely a diffuse pelvic blurring at the second examination. The prognostic value consisted in proof that there was a tubal disorder in cases which were being treated symptomatically for chronic pelvic pain and in deciding which of those cases should or should not be operated upon. If proof was obtained by X ray examination that there was drainage both into the uterus and into the peritoneal cavity then operation should be postponed; evidence of defective drainage on the other hand would hasten operative treatment.

In one of Dr. Murray's cases the lipiodol injection caused an acute attack of inflammation with pus formation, but the operative findings showed pre-existing chronic infection. He considered that all cases requiring active disinfection under anæsthesia for cervicitis and vaginitis should be injected with lipiodol and radiographed; the pain associated with a cervicitis was due in his opinion to a mild tubal infection, and an injection with lipiodol had a diagnostic and therapeutic value in such cases.

ROYAL ACADEMY OF MEDICINE IN IRELAND

SECTION OF SURGERY

AT a recent meeting of this section with Mr. R. ATKINSON STONEY, the President, in the chair, Mr. F. J. MORRIN reported the case of a woman, aged 33, who had a painless tumour in the left hypochondrium, with all the clinical characteristics of an enlarged spleen. The blood picture excluded splenic anæmia, and a pyelogram showed a normal renal pelvis.

Hepatosplenography

Thorotrast was employed to demonstrate radiographically the liver and spleen. This substance, said Mr. Morrin, was a 25 per cent. colloidal solution of thorium dioxide, stable and non-toxic, and on intravenous injection it was deposited in the reticulo-endothelial cells of the body. Because the liver and spleen were specially rich in these cells, the drug was deposited in sufficient concentration to render these organs opaque.[1] Concentration of the salt was slow and its excretion was even slower. Radiograms

[1] See THE LANCET, 1931, i., 144.

taken 48 hours after the injection of the full dose showed the liver and spleen clearly outlined, and a further radiogram taken ten days after administering the drug showed clear delineation of these organs.

It was recommended that a small dose of 10 c.cm. be given in the morning and if there was no reaction (nausea or vomiting) a further dose of 15 c.cm. might be given on the same evening. The necessary dose was from 50 to 75 c.cm., given intravenously during three to five days. The method should not be employed in cases of advanced hepatic cirrhosis, definite fibrosis, advanced parenchymatous involvement of the liver and spleen, advanced jaundice, or renal deficiency. It might nevertheless be useful in the differential diagnosis of obscure abdominal tumours.

Hepatosplenography in this case showed a normal liver and spleen. A bismuth enema was arrested at a point just distal to the splenic flexure. Operation revealed a large tuberculoma of the transverse colon involving the splenic flexure. A resection of the tumour was performed, and the operation completed by a lateral anastomosis of the bowel. The post-operative course was uneventful.

The PRESIDENT thought the case very interesting, because although tuberculoma of the cæcum was fairly common, the diagnosis between it and carcinoma was sometimes extremely difficult, and tuberculoma in other parts of the intestine was very rare. In this case hepatosplenography made it clear that one was not dealing with an abnormal spleen. But until more experience had been gained, he personally would be slightly diffident about using it in all cases.

Dr. G. C. DOCKERAY said that it was supposed that antibodies were formed by the reticulo-endothelial system. Having regard to this fact, he wondered whether it might not be unwise to block the reticulo-endothelial system with thorium in patients who were very ill.

Dr. H. BOUCHIER-HAYES asked if thorium had been tried in cases of subphrenic abscess, and if anything was known about the work which had been done with thorium in cases of glandular enlargement in malignant disease.

Mr. MORRIN, in reply, said he thought that in patients who were very ill the method should not be used. He thought it probably would help in the diagnosis of subphrenic abscess, but he had never tried it in such a case. He had no experience of its use in malignant disease.

SECTION OF PATHOLOGY

A MEETING of this section was held on May 6th, with Dr. J. T. WIGHAM, the President, in the chair.

Ganglioneuroma

Dr. W. BOXWELL showed a specimen of ganglioneuroma.

The patient, a man aged 30, was admitted to hospital to have a pleural effusion tapped. He stated that before admission four or five people had tried to tap it without success. He was very much wasted, had a history of cough for many years, and had recently had bronchitis with profuse expectoration. The condition was thought to be phthisical. While in hospital he had a bad cough, much expectoration, and sweating. The only place where any breath sounds could be heard was right at the base of his lung. Having regard to this fact, it was thought probable that there was not a pleural effusion. Three days after admission the patient died. Evidence of chronic bronchitis and bronchiectasis was found post mortem, with patches of pneumonia, and it was thought that the patient had really died of sepsis. The tumour, which weighed just over three pounds, was adherent to a tiny little piece of lung. There was practically no lung on the right side, as it had apparently been absorbed while the tumour was growing.

Ganglioneuromata, said Dr. Boxwell, were very rare, for only 51 had been described. Most of them were quite small, about the size of a hazel-nut. They were supposed to develop from the sympathetic ganglia or from the medullary part of the suprarenal glands.

Lymphatic Leukæmia

Dr. A. R. PARSONS read notes on the case of a girl, aged 4, who was admitted to hospital with a greatly swollen and hard abdomen.

The mother said that for six months the child had been losing her colour and her appetite; she did not want to play and slept all the afternoon. Before admission she ate practically nothing, but drank a good deal. The spleen was greatly enlarged, and the liver extended down to the umbilicus. The glands in the neck however were not swollen. A blood examination showed 5 per cent. of polymorphonuclear cells, and 95 per cent. of lymphocytes. She became gradually worse and died about a week after admission. A post-mortem examination was carried out.

Dr. WIGHAM in demonstrating the specimens said that the liver and spleen were greatly enlarged. The kidneys had no appearance at all of kidney structure, but were just white and red masses, the red masses being hæmorrhagic areas. Both liver and kidneys showed extremely well-marked lymphoid metaplasia.

Sarcoma of the Pancreas

Dr. C. J. SHORTALL in a paper on sarcoma of the pancreas said that neoplasms of the gland were in general rare, and most of them were carcinoma. Sarcoma was very rare and Marxer, writing in 1925, said that up to that time round-celled sarcoma had not been described.

A man, aged 31, was admitted to St. Vincent's Hospital on Feb. 23rd, 1932, suffering from severe epigastric and loin pains. These had begun in the previous December. Vomiting was infrequent. For a time the case was treated as one of gastric ulcer. Jaundice appeared shortly before admission and gradually became more intense. Slight epigastric distension and extreme tenderness in this region with ecchymosis were noted. Blood count revealed a mild secondary anæmia and the serum gave an immediate direct positive van den Bergh reaction. Cholecystography showed a liver shadow which was denser than normal but failure of concentration of the substance in the gall-bladder. The stools were clay-coloured and contained excess of undigested fat. He died on April 8th.

Post mortem the abdomen was found to contain bile-stained fluid. To the naked eye the whole pancreas seemed to be involved in a growth which at its head compressed and occluded the common bile-duct. The liver and the other abdominal organs were deeply bile-stained and the gall-bladder was distended. Microscopically the pancreatic growth was shown to be a round-celled sarcoma with small isolated patches of normal gland substance containing acini, ducts, and islets of Langerhans. A single secondary deposit was found in the liver, another in the wall of the gall-bladder, and a number in the right lung.

Dr. PARSONS said that this patient had been under his care for a month in another hospital. At that time he complained of pain in the epigastrium which he said he had had for a month. It was worse immediately after meals. He was greatly wasted, and suffered from constant retching. The presence of an ulcer in the stomach was suspected. Radiography showed nothing suggestive of any intrinsic lesion.

Dr. J. MCGRATH said that Ewing practically denied the existence of sarcoma of the pancreas, so the present case must be a very uncommon one. The lung condition was very interesting, and it was remarkable that it was only the right lung that was involved, the left lung being almost normal.

Mr. C. O'LEARY exhibited a sacro-coccygeal tumour from a fœtus, and Dr. PARSONS read notes on a case of cardiac thrombus, a case of pleurisy, and a case combining cancer of the stomach, aneurysm of the abdominal aorta, and hydronephrosis.

REVIEWS AND NOTICES OF BOOKS

Recent Advances in Pathology

By GEOFFREY HADFIELD, M.D., F.R.C.P. Lond., Professor of Pathology in the University of London; Pathologist to the Royal Free Hospital; and LAWRENCE P. GARROD, M.A., M.B., B.Ch. Camb., M.R.C.P. Lond., Bacteriologist and Lecturer in Bacteriology, late Demonstrator of Pathology, St. Bartholomew's Hospital. London: J. and A. Churchill. 1932. Pp. 392. 15*s*.

Prof. Hadfield and Dr. Garrod have succeeded in what must have been a most difficult task—"to present recently acquired knowledge of disease processes in a form useful to the student of medicine." They have accomplished it partly by the method of special pathology, that is, by taking in order the systems of the body and supplying critical accounts of new work; and partly by separate chapters devoted to matters not conveniently classified by this method.

The first seven chapters deal concisely and lucidly with modern views on such difficult subjects to compress into small compass as the reticulo-endothelial system, tissue culture, different aspects of cancer research, and certain deficiency diseases. These chapters could hardly be better; and in those dealing with the various systems we find but few and unimportant matters to criticise. In the chapter on the cardiovascular system the different forms of endocarditis and diseases of the arteries are selected for discussion. The renal changes in essential hypertension are here described and it is helpful to have these changes explained as a part of the disease as a whole. It would have been a convenience to the student had the renal changes in acute and subacute bacterial endocarditis also been included in the appropriate place. In the chapter on the respiratory system an account is given of new work on the pathogenesis of lobar pneumonia, followed by a note on psittacosis pneumonia, and sections dealing with cancer of the lung and the pneumoconioses. Diseases of the digestive system are briefly noticed, with an account of Matthew Stewart's recent work on peptic ulcers, and there follows a somewhat vague commentary on hepatic necrosis and fibrosis which omits any reference to hæmochromatosis and to the recent controversy over the ætiological significance of copper in this disease. Brief comment is made on the unsatisfactory nature of our knowledge of the pancreas, and the recent discovery of the association of tumours of islet tissue with hyperinsulinism is recorded. The subject of Bright's disease receives longer and more detailed treatment both from the point of view of functional derangement and of the morbid anatomy and histology of this condition. The recent classification of Dorothy Russell has been extensively drawn upon in the description of types although the nomenclature used by her is not adopted. In "chronic toxic nephritis with reticular fibrosis type III." (p. 307) the statement that the arteries in the boundary zone are "very prominent and pointing" is misleading. This is a type found in children and young adults and is occasionally associated with renal dwarfism; it is a notable and curious fact that cardiovascular hypertrophy is usually absent or slight in this type and the renal arteries consequently show little change. In the section devoted to the central nervous system a description of the neuroglia is followed by an account of Bailey and Cushing's classification of the gliomas. This is admirably concise, though it is not free from minor inaccuracies. For instance, it is by no means generally agreed that the microglia is an element of the reticulo-endothelial system: a rival view that it is a variety of the neuroglia proper still flourishes in central Europe. The assumption which is here perpetuated that the Cohnheim-Ribbert theory on which the classification of Bailey and Cushing is based has been generally abandoned is hardly justified, for this theory is still held by many authorities. Incidentally Bailey and Cushing have never claimed that this theory would account for all the known kinds of glioma. The statement that hæmangioblastomas are confined to the cerebellum takes no account of the cerebral examples described respectively by Walshe and Barnard in this country and by Rochat in Holland. The forms of encephalitis due to virus diseases form a later section and are admirably summarised. Diseases of the ductless glands are represented by a discussion of the different kinds of goitre and of various disturbances of the parathyroid and suprarenal bodies. Special attention is directed to the alterations in calcium metabolism and the bone diseases that accompany abnormal parathyroid activity; in the next edition recent work on adenomas of the pituitary gland will doubtless claim inclusion.

In supplying references at the ends of sections, the authors have selected those only that appear to them to contribute materially to knowledge. It is open to question whether a considerable amplification of these lists would not be advantageous, for some references are omitted which are of first importance to the advanced student. A notable example is Turnbull's classical paper on diseases of the blood-vessels. The book is illustrated by a large number of microphotographs which maintain a high standard of excellence.

The Acute Abdomen

By C. H. FAGGE, M.S., F.R.C.S., Surgeon to Guy's Hospital. London: John Bale, Sons and Danielsson, Ltd. 1932. Pp. 92. 2*s*. 6*d*.

Mr. Fagge has succeeded in giving an admirable outline of surgical abdominal emergencies within the limits imposed upon him by the editor of this series of pocket monographs. It is a book for an hour or two's leisure at the fireside, and one could guess that it was similarly written in a comfortable armchair from the author's wealth of experience in this aspect of surgery. He follows the usual practice in most emergencies. We note with interest, however, that he is a strong advocate of operative treatment of a bleeding gastric or duodenal ulcer at the earliest possible moment, using the hæmoglobin percentage as a guide to the risk incurred. He says he has never seen gastrostaxis in a man; this must be an unusual experience if this term is held to include oozing from very small mucosal ulcers, which are revealed only by the closest search even on the post-mortem table. Another interesting opinion is that expressed on the treatment of appendicitis; Mr. Fagge recommends delay in operation when the patient is seen after the third day. On page 13 the statement is made that an appendix abscess (apparently the ordinary variety) can be opened extraperitoneally; presumably Mr. Fagge means without passing through the unaffected part of the general peritoneal cavity.

The house surgeons to whom the book is dedicated, and many other individuals, will derive both profit and pleasure from reading this manual.

Surgical Errors and Safeguards

By MAX THOREK, M.D., Surgeon-in-Chief, American Hospital, Chicago. London: T. B. Lippincott and Co. 1932. Pp. 696. 45*s*.

Dr. Thorek, impressed by "the disastrous effect of major surgical procedures, attempted lightly by young, or even inexperienced older surgeons" of which, he says, he still has almost daily evidence, has been moved to write this book to point out the lurking dangers of even simple operations, the mistakes which may be committed, and the precautionary measures. Each chapter discusses errors and safeguards in respect to operations in general, or to those in particular regions of the body. There is no doubt that the writer of this book has struck an original note and has performed a distinct service in calling attention to the harm which the inexperienced may cause and the errors into which they may fall. Dr. Thorek has collected much information which is not easy of access. It is also extremely interesting for any operator to read of the trials and difficulties of other surgeons and to see how they have attacked the problem of extrication and with what success they have emerged.

There is much sound advice and wise counsel in the book, but it does not quite accomplish the author's aim. It falls short because, in so many instances, the way to remedy mistakes is omitted. Thus the damage which may be done to the urethra by the unskilled use of bougies is stressed, but neither the proper method of passing them, nor even the different varieties of bougie adapted to different conditions are described. This is a sad gap. Again, the spinal-accessory nerve in the posterior triangle of the neck and the supply to the depressor labii inferioris in the submaxillary triangle are certainly liable to injury during the excision of tuberculous glands it is true, but directions could be given to a surgeon on how to avoid these accidents. Again, when removing thyroglossal cysts we are told (in bold type) to dissect, not the cyst alone, but also the prolongation into it of the remnants of the thyroglossal duct; at the same time we are warned to make sure that there is a thyroid gland present in its normal position. The subject is left thus, no hint being given that the first object cannot be attained unless a small portion of the hyoid bone be removed, or any guidance on the proper procedure—i.e., whether a dissection of the neck is recommended to determine the existence of the normal thyroid. These are just the things the novice wants to know; he has probably already heard about the possibility of the accidents themselves.

Other examples of failure in constructive teaching could be found, but the book contains much valuable teaching, especially in those branches of surgery in which the author has obviously had extensive experience, as in goitre surgery. His notes on the preparation and care of toxic cases are simple and instructive. Apparently Dr. Thorek has had to perform tracheotomy for urgent dyspnœa due to a goitre in which delivery of the gland failed to bring relief; this must be a very rare emergency. Writing of high tracheotomy in another part of the book, he says that three or four rings of the trachea should be divided. This would surely mean an unnecessarily large wound which would certainly involve the isthmus of the thyroid gland. Dr. Thorek lays it down as a rule that tonsillectomy should never be performed before the coagulation time of the blood has been found to be normal.

The book, as a whole, is entertaining and stimulating; it is original in conception, and very well produced and illustrated.

The Physical Basis of Personality

By C. R. STOCKARD. London: George Allen and Unwin. Pp. 320. With 74 figures. 12*s*. 6*d*.

THIS book is of interest to medical readers chiefly by reason of the author's description of his own researches into the mechanism of the production of double and other monsters and into the nature and inheritance of gigantism, dwarfism, and achondroplasia in different breeds of dogs. Partial achondroplasia is common among dogs either in their faces or their legs, or both, and his investigations into its inheritance and behaviour in crosses are important in any consideration of the human disease. The work is in progress so that it is perhaps hardly fair to complain that the descriptions are defective in anatomical and histological detail, and that few facts are cited to support the implication that the ductless glands are involved.

Mental Deficiency Practice

By F. C. SHRUBSALL, M.A., M.D., F.R.C.P., D.P.H., Senior Medical Officer, London County Council; and A. C. WILLIAMS, M.R.C.S., L.R.C.P., D.P.H., Divisional Medical Officer, London County Council. London: University of London Press. 1932. Pp. 352. 12*s*. 6*d*.

THIS book, the work of experienced examiners of defectives, is designed to set out "the steps required to effect a satisfactory disposal of any given case." Methods of diagnosis are described and the administrative procedure for the purposes of both the Education Act and the Mental Deficiency Acts is defined. The book also includes short sections on causation, pathology, and psychology which, if amplified, would entitle it to rank as a text-book. In their present form, however, their omission would have been no loss. The absence of diagrams reduces the value of the chapter on pathology; and the description of the propagation on mendelian lines of a simple unit recessive serves little purpose here, since geneticists agree that mental defect is not a unit factor. The practical notes on points relating to individual mental tests are mostly excellent though occasionally somewhat elementary. Several good performance tests are included which will be found especially useful in examining older defectives, for whom the ordinary scale of the Binet type has but limited value. The authors' belief in the use of the word-association tests for high-grade cases may not be shared by all examiners. No reference is made to the significance of children's drawings. Of especial value are the indications given for the testing of blind and deaf subjects.

The arrangement of the book tends at times to a certain amount of repetition which might have been avoided. The detailed description given of the method of filling up the official examination form of the Board of Education, while undoubtedly useful, has involved the repetition of matter already given in the chapters on general description and clinical types. Moral defect is treated with unusual brevity. The authors' view is that the main characteristic of this condition is an "all-round lack of feeling tone" and while they hint at the possible association therewith of some lack of forethought and wisdom, they

do not appear to stress this element so much as do some authorities. Enough is said to make it clear that a diagnosis of moral defect is not to be made lightly, and that it is not easy to fit actual cases into a definition which, as it stands, corresponds to no psychological entity and requires to be recast.

The interesting table given comparing mental ages with chronological ages of children in London special schools suggests the question why more than 10 per cent. of these children should have a mental age within less than two years of their chronological age. It would seem as if educational attainments count for more in their selection than mental ratios. This has a bearing on the larger problem raised by the Wood Report, of the desirability of abolishing certification for educational purposes.

The section dealing with administrative procedure is excellent, and the list of specimen forms given in the Appendix unusually complete.

The Donnan Equilibria

Their Application to Chemical, Physiological, and Technical Processes. By T. R. BOLAM, M.Sc. Bristol, D.Sc. Edin., Lecturer in Chemistry in the University of Edinburgh. London: G. Bell and Sons, Ltd. 1932. Pp. 154. 9*s*.

THE Donnan equilibrium theory has always attracted the attention of physiologists and biochemists interested in the physical side of their work. The classical experiments of Loeb on the application of the Donnan membrane equilibrium theory to explain the behaviour of proteins gave another fillip to the study of biological processes from this point of view. It followed naturally that others should develop these mathematical theories in relation to various processes such as secretion and diffusion in the animal body. The principle has been applied to the study of the equilibrium of blood chiefly by American workers—notably L. J. Henderson, Van Slyke, and their colleagues. Its application to the osmotic relations of the intra-ocular fluids has been attempted by Duke Elder and others, and urinary secretion has not escaped attention. This book gives an able summary of these various activities. The work is a little topheavy with physical chemistry, and the biological applications are dismissed in a relatively short space. To those who are not familiar with the literature this work will be of much value since a useful general bibliography is given at the end.

Filterable Virus Diseases in Man

By JOSEPH FINE, M.D., B.Sc., D.P.H. Glasg., D.T.M. Liverp., Assistant to the Professor of Public Health, Edinburgh University. Edinburgh: E. and S. Livingstone. 1932. Pp. 144. 6*s*.

Dr. Fine has provided a really useful outline of filtrable virus diseases and we anticipate that it will find many readers amongst medical students. His task has been by no means easy, for an elementary text-book on a rapidly growing subject is far more difficult to compile than a comprehensive treatise. The various virus diseases of man, grouped according to their mode of transmission and tissue affinities, are clearly described in successive chapters. There are two appendices, in the first of which information on human virus diseases is tabulated, whilst the second resumes our knowledge of all viruses, including the bacteriophage. The scheme of classification used can only be accepted as a provisional one; the author himself realises this and has merely adopted it to facilitate the presentation of his subject. Certain contradictory statements have found their way into the work. On p. 6, for instance, one of the characters of the yellow fever group is said to be that "the serum of convalescents is capable of protecting against an injection of infective blood," and in the next paragraph that "neither immune bodies nor viricidal properties have been demonstrated in the serum of convalescents in any members of the group." Again in Appendix 1 we read that in zoster and varicella complement-fixing bodies are absent from the serum of convalescents; yet on p. 63 the work of Netter and Urbain demonstrating cross complement fixation with the serum of zoster and varicella convalescents is mentioned. It is not correct to say that perivascular demyelination is a constant feature of the cerebral type of poliomyelitis (p. 91). But to labour these points would give a false impression; for on the whole the book is accurate and clear. Dr. Fine has made it easy for those who have not the time to seek out original papers on filtrable virus diseases or to consult large works to follow the progress made in recent times, and many will be grateful for the opportunity.

Leçons cliniques sur les maladies du sang et des organes hématopoietiques

By CH. ACHARD, Professeur de Clinique Médicale à la Faculté de Médecine de Paris; Membre de l'Académie de Médecine et de l'Académie des Sciences. Paris: Masson et Cie. Fr. 34.

HÆMATOLOGY has proved one of the most fruitful fields of medical research during the past eight years; but this clinical note on the diseases of the blood and the hæmopoietic organs, by Prof. Achard, in which he has incorporated much recent work from different sources, should serve to check undue optimism. In only three of the conditions described does he offer any hope of recovery or of rational treatment. He does not, however, discuss the part played by deficient nutrition in the ætiology of certain anæmias, nor is mention made of idiopathic microcytic anæmia or acholuric jaundice. His conclusions might, therefore, be considered unnecessarily pessimistic. Each disease discussed is illustrated by extremely detailed case-histories together with the results of repeated blood examinations; these are sometimes difficult to follow since they are not arranged in tabular form. Unlike most observers he believes that hæmophilia may occur in women. He does not mention recent work from Chicago on the possible significance of the female sex hormone in the ætiology of the condition; this work, if confirmed, may have a bearing on treatment. A few observations by G. Fontes and I. Thivolle, published in *Le Sang* (1930, iv., 658), on the therapeutic value of the injection of tytophane and histidine, which has as yet received no corroboration, form the basis for the somewhat sweeping conclusion that lack of these two amino-acids, due to deficient gastric digestion of protein, is responsible for the failure of hæmopoiesis characteristic of pernicious anæmia. The chapters dealing with leukæmias and the confusing conditions of aleukæmic leukæmia and agranulocytosis contain many interesting clinical observations. Prof. Achard wisely insists on the danger of over-emphasis of minute morphological differences found in the white cells of the peripheral blood. Such differences depend in many instances upon a personal factor.

THE LANCET.

LONDON: SATURDAY, JUNE 11, 1932.

THE PERSISTENT OFFENDER

THE report[1] of the Departmental Committee on Persistent Offenders naturally does not confine itself to the custodial aspect which the events and consequences of the Dartmoor mutiny recently emphasised. It looks to the reform of the offender before he becomes persistent. In 1930, the latest year for which criminal statistics are available, more than half the 3900 sentences of imprisonment were imposed on persons who had already been in prison. The figures confirm the conclusion that the probability of a relapse into crime increases with the number of previous sentences. The inference is that our present methods do not check the criminal propensities of the persistent offender but progressively deteriorate him. What then are we to do about him? First of all, what manner of man is he? Prison authorities group him in three categories—first, the offender of relatively strong mind and character (often young and therefore more susceptible to the reformative process) who has deliberately chosen crime; secondly, the weaker spirits who drift into crime through inability to face the difficulties of social life; and thirdly, the pathological cases of abnormal or subnormal mentality amenable possibly to medical or psychiatric treatment. To this third class and the committee's observations thereon we will presently return. Meanwhile, to run briefly through the committee's reasoned recommendations, it is proposed to abolish penal servitude and the cumbrous and already obsolescent procedure (under Part II. of the Prevention of Crime Act, 1908) for giving additional sentences to habitual criminals. The committee advocates two new forms of punishment, detention (for a period from two to four years) and prolonged detention (for a period from five to ten years). The change is partly one of vocabulary. Prolonged detention is proposed for a person convicted of a crime who has at least three previous convictions of crime and whose criminal habits and mode of life are such that lengthened confinement is expedient for protection of the public; this is not very different from the existing law. But "crime," it is proposed, shall include not only all felonies (as already in Part II. of the 1908 Act) but also certain sexual offences and all attempts to commit "crime." The latter categories are at present excluded because they are misdemeanours and not felonies—an anomalous distinction which is ripe for removal. Both classes of the new detention will aim at remedial training; there are to be carefully graded establishments suitable for all types of offender, a new impetus in adult education and industrial training, and full trial of labour camps, "minimum security structures," the parole system, and the possibility of applying female influence by the appointment of matrons in penal institutions. If penal servitude is to go, we may hope that various grim enactments as to transportation will at last be removed from the statute book where they at present linger because, by a typical Parliamentary makeshift, they were applied for the purposes of penal servitude.

Chapter XI. of the report is of much interest to medical readers, for here we find discussion of those pathological cases which are possibly amenable to psychiatry. Here the committee attempts to answer the question how far the persistent offender can be treated as a mental patient. Reviewing the statutory facilities for dealing with the habitual drunkard and the mentally deficient, the committee passes on to those types of minor mental abnormality for which no special statutory provision exists. There are the weak-minded who leave school without adequate after-care arrangements. There are the delinquents who may become persistent offenders through emotional and temperamental instability; some of these cases appear to right themselves when physiological balance is regained after adolescence. Then there are the offenders who repeatedly commit the same kind of crime, acts of indecency and other sex offences, magpie thefts, and certain minor peculations, arson and some other acts of wilful damage against property. Punitive and reformatory measures of the ordinary sort seem here ineffective; yet some mental abnormality must be the cause of this conduct which is a menace or a nuisance to society. After examining the evidence of experts in psychotherapy, the committee guardedly proposes to try what psychological medicine can do. It recommends that a medical psychologist be attached to one or more penal establishments to carry out treatment in selected cases. He should be assisted by voluntary women workers who will visit the offender's home and obtain information about his history and circumstances. Already for some time lads under 21 years of age who are received in the Boys' Prison at Wormwood Scrubs, sentenced to detention in a Borstal Institution, or remanded from the Metropolitan and adjacent areas for medical report, have been psychologically examined by the medical officers of the prison. The committee considers that extended action along these lines will show whether the psychological treatment of delinquency is of sufficient value to justify statutory recognition. At the same time the committee is careful to affirm its belief that crime is not a disease, and that it is impracticable and generally unnecessary to examine the mental condition of all adults who appear in court upon a criminal charge. The affirmation of this belief is a reminder that the Home Office is not yet ready either to abandon the legal principles of criminal responsibility in relation to abnormality of mind or to take full advantage of the help that medical science can give. The committee's recommendation, nevertheless, is a notable step which may lead legal principles far afield.

[1] H.M. Stationery Office. Cmd. 4090. 1*s.* 6*d.*

TRANSURETHRAL PROSTATECTOMY

THE two papers on prostatectomy at the front of this issue are concerned with a variety of the operation which has had little notice in this country. Indeed, apart from a paper written by Mr. KENNETH WALKER[1] in 1925, we can recall no extensive review of the modern methods of transurethral resection; and it is to be hoped that our American contributors will succeed in arousing some of the interest in it which has evidently inspired their own experiments.

The national tradition in surgery is in favour of thoroughness, and an operation which removes only part of the prostate, and leaves behind tissue that may increase in size and cause recurrence of symptoms, is apt to appear incomplete and therefore unsatisfactory. For this or other reasons most urologists here are of opinion that cases suitable for this form of treatment are few and far between. In the light of the papers by Prof. CABOT and Dr. MCCARTHY can this attitude be justified? Whatever the answer, it is clear at any rate that the whole subject of the prostate and its treatment is full of difficulty. We do not know for certain whether what we remove in "prostatectomy" is in fact the prostate, or whether it is—as some pathologists have long maintained—an enlargement of the submucous glands of the posterior urethra. Our knowledge of its physiology and pathology is indeed so far from complete that guidance in treatment must be sought in clinical results rather than in any general principles. From the standpoint of the clinician the results of prostatectomy are excellent, but it certainly has to be admitted that they are obtained at no small price, for the operation still carries with it a high mortality. This mortality is not of course surprising, in view of the age of the patients and their liability to post-operative complications; but an operation with a death-rate that ranges from 8 per cent. to 20 per cent. can hardly be regarded as satisfactory, however great and however permanent the benefit to the survivors may be. The most careful consideration must therefore be given to any form of treatment that carries a lesser risk—even if the critic starts with a reasonable suspicion that the relief it gives cannot be so lasting or so complete as that which follows more radical intervention.

It is said that the transurethral operation is appropriate in only a small proportion of cases of prostatic obstruction; but CABOT and MCCARTHY agree that recent developments have greatly extended its scope. The latter goes so far as to say that "90 per cent. of prostatic enlargements, malignant or otherwise, may be regarded as so much plastic material to be removed seriatim by a loop charged with a new type of cutting current." This is a claim that may well prove excessive, but the more conservative estimate given by Prof. CABOT is high enough to dispose of the contention that transurethral therapy can rarely be used and is therefore of little importance. CABOT, who has long been known as an enthusiastic advocate of suprapubic prostatectomy, holds that 50 per cent. of cases of obstruction are amenable to treatment by transurethral methods, and he anticipates that with improvement of technique something like 75 per cent. will eventually be brought within their range. Only the patient with a massive enlargement of the lateral lobes will have to face the greater peril of complete prostatectomy, and as W. F. BRASH points out[2] this type of prostate is becoming rarer. The patient of to-day seeks medical advice at an earlier stage of his trouble, for it is now more generally known that safety lies in timely treatment. Hence the proportion of cases which could be treated by transurethral prostatectomy is greater than it was formerly, quite apart from the progress that has been made in technique. How far the present hopes may be disappointed is necessarily uncertain, but even allowing for unexpected limitations it is hard to avoid the conclusion that the operation is one which has come to stay.

[1] Brit. Med. Jour., 1925, i., 201.

ANIMAL ECOLOGY

As a natural reaction to the analytical method which has been so characteristic of biological progress in the last hundred years, we have heard a good deal in recent times of the necessity of studying the animal as a whole. Most workers whose aims and procedures are professedly scientific have found a good deal of difficulty in investigating live things without taking them to pieces; naturalists alone have been content to look at animals and plants as they are, to know about them and to be with them, and to those who are brought up in the confines of laboratories their attitude towards the organisms which interested them must have seemed as much that of a lover as of a student. We are now happily returning to the atmosphere of the eighteenth century, and are reviving a natural history which is as scientific as any other section of biology in the sense that it is orderly, systematised, and quantitative. The object of animal ecology is to discover how animals live and die, their breeding and multiplication, their food, their enemies, and the causes of their death—to find out, that is, for the blackbird, the mole, the stickleback, and the slug what the hygienist is anxious to know about man. It seems strange that in the 70 years which have passed since the publication of the "Origin of Species" so little has been done to ascertain the actual facts on which the whole theory of that book depends; that natural selection operates has been accepted, but of what it operates on and by what means, we are still largely in ignorance. It is the business of ecology to find out.

The inherent interest of the search is obvious, and its practical importance is now sufficiently plain. Man's control of his biological environment depends on his knowledge of how it lives and moves and has its being. Malaria, trypanosomiasis, plague, typhus are all in the main ecological

[2] Minnesota Med., April, 1932.

problems, and our capacity to deal with them depends mostly on how much we know of the lives of mosquitoes, tsetse flies, fleas, and lice. The strange periodical fluctuations in the numbers of animal populations to which Mr. ELTON has paid particular attention are responsible on the one hand for the price of a fur coat and on the other for the wholesale ruin of a countryside by locusts. The student of infectious diseases wants to know what happens when the natural interaction between a parasite and its host is not interfered with by conscious sanitary measures; what exactly is the relation between the plague bacillus and the rat, or between trypanosomes and game in Africa? Are infections with bacteria, protozoa, and viruses important causes of death in natural populations of animals as they are among artificial populations of human beings? Real comparative pathology has hardly been born yet; that it will have abundant applications to human problems there can be no doubt.

For these reasons we heartily welcome the appearance of the new *Journal of Animal Ecology*, though some may wish the promoters had seen fit to use the original European spelling of the key word. It is issued[1] by the British Ecological Society which has published the *Journal of Ecology* (mostly botanical) since 1913, and is edited by Mr. CHARLES ELTON and Mr. A. D. MIDDLETON, of the department of comparative anatomy at Oxford. The first number contains a quantitative account of the rookeries in the Wirral, a census of the bird population of an Oxfordshire farm, an analysis of the fluctuations of midges infesting wheat, the prey of a carnivorous fly, and an extremely interesting description of how each nest of wood ants in a coppice has its own territory and feeding grounds. From abroad we have papers on bird life in Brazil and fruit bats in Australia. The journal should appeal to readers of very varied interests, and it will play a most useful part in the development of real biology; we hope it will quickly receive the support which it needs to put it on a sound foundation.

THE NUTRITIVE VALUE OF MARGARINE

MARGARINE is one of the foods which is not at present officially defined in this country and it can legally be made from any kind of fat. The chief restrictions regarding its composition are that it must not contain more than 16 per cent. of water nor more than 10 per cent. of butter fat. The modern manufacturer employs fats from both animal and vegetable sources and is able to produce from these a substitute for butter which may compare favourably with butter itself in regard to appearance, consistence, and taste. The Institute of Hygiene recently appointed a committee to consider the conditions which margarine should fulfil in order that it might be certified as a good food. It was agreed[2] that as sources of energy margarine and butter were equally valuable, so far as could be determined. The chief difference between the two foods is in their vitamin content. Butter is a valuable source of vitamin A and contains moderate amounts of vitamin D, whereas most brands of margarine are deficient in both of these vitamins. It is now possible to add concentrated preparations of these vitamins in a comparatively stable form to margarine during the process of manufacture, and vitaminised margarines are already being sold which contain at least as much vitamin A and vitamin D as good butter. The vitamin content of such margarines is likely to be more constant than that of butter, which is known to vary considerably with the conditions under which the cows from which the butter is derived are kept. It is the usual practice in this country to colour margarines, and for this purpose either carotene or aniline dyes are used. Carotene is now recognised as the precursor of vitamin A, and its presence in margarine enhances the vitamin A activity of the product. In view of these facts the committee have submitted certain recommendations with regard to the properties of a good margarine. The product must be made from pure ingredients and must contain vitamins A and D in amounts equivalent to those found in samples of the best summer butter. It should not contain more than 10 per cent. of water and must be free from added preservatives other than salt. It should be coloured with carotene and not with aniline dye. It was further recommended that it should contain butter fat up to the present legally permitted limit of 10 per cent. of the total fat; a limit which is fixed by law at this low level to enable the analyst to distinguish readily between margarine and adulterated butter. Such a margarine might conceivably be inferior to natural butter in nutritive value owing to the absence of food factors other than vitamins A and D from the synthetic product, but its food value would be definitely superior to that of ordinary vegetable margarines.

[1] Cambridge University Press. 30s. per annum.
[2] Jour. Inst. Hygiene, June, 1932, p. 12.

THE BIRTHDAY HONOURS

ON page 1275 will be found the names of medical men and women who received honours on the King's Birthday. These do not, of course, represent the full recognition bestowed upon medical endeavour, for the complete Honours List contains the names of many who have worked in alliance with medicine though they do not belong to the profession. Among the new barons Mr. David Davies has given substantial help especially to the King Edward VII. Welsh National Memorial Association, of which he is now president. Mr. James Macfarlane, who receives a knighthood, is chairman of the Glasgow Royal Infirmary, and by gifts and otherwise has done much to make possible its extension at Canniesburn. Notable among the Commanders of the Order of the British Empire is Miss Margaret Anderson, lady superintendent of the East End Maternity Hospital; and elsewhere we see with pleasure the names of others who have distinguished themselves in the service of hospitals and laboratories in nursing and in public health administration.

ANNOTATIONS

LAWSON TAIT

Mr. Christopher Martin has done well to reprint the substance of two lectures which he delivered, one to the Midland Medical Society, the other to a group of American visitors. In these he gave an unbiased account of the life and work of Lawson Tait[1] and by personal reminiscence assists us to appreciate the kind of man that he was, going far to remove the wrong impressions created by Tait's foibles and failings. Lawson Tait was the pioneer of much in abdominal surgery, and started almost as a child on the road to surgical success. Born in 1845, he won a scholarship at the University of Edinburgh in 1860, and while still a student became a pupil of Sir James Young Simpson, in whose house he lived. To Simpson he bore such a remarkable resemblance that the belief that he was his patron's illegitimate son was widely held, though the rumour has been indignantly contradicted by members of Simpson's family. Despite his precocious and promising start, and his early association with Simpson, Tait did not proceed to a medical degree, but contented himself with the Edinburgh diplomas which he obtained in 1866. In the following year he was appointed resident surgeon at the Clayton Hospital, Wakefield, and in 1868 he performed his first ovariotomy with success. He stayed at Wakefield for three years and then started in general practice, but with the intent to make operative surgery his career, although he was at that time attached to no hospital and held no academic position. Real genius backed by enthusiasm and some aptitude for self-advertisement brought him practice, and by 1880 his name as an abdominal surgeon was widely familiar to all England. Mr. Martin gives a calendar of his achievements which makes astonishing reading, while the professional position that he acquired and the appointments which fell to him are remarkable, when it is recalled that from 1880 onwards Tait lost no opportunity of opposing Listerian surgery. But a summary of his own technique in abdominal surgery shows that, while he was wrong in his attacks on Lister, his extreme cleanliness was undoubtedly a forecast of modern aseptic methods. His first move was to join in the foundation of a special hospital, as he was debarred by the absence of honours degrees or diplomas from obtaining a post on the staff of a teaching institution. He sat down while in general practice to read for the F.R.C.S. Eng., and promptly secured the diploma. He then took a leading part in founding the Birmingham Medical Institute, and in 1881 read at an International Medical Congress a paper embodying five entirely new surgical procedures of the first importance. He was now appointed professor of gynæcology in the medical faculty of Queen's College, Birmingham, out of which to some extent the University of Birmingham evolved, and finally he was elected president of the Gynæcological Society and of the Medical Defence Union, which he had largely helped to reconstitute. Everything about Tait's life was dramatic, and it is a dramatic fact that a libel action of exactly the sort where the Medical Defence Union should have been able to help him started Tait's downfall, which was as rapid as his rise. The action had to be compromised owing to Tait's own conduct, and the fact damaged him greatly in the eyes of the public. His practice rapidly declined, he resigned his numerous important offices, and he died in comparative poverty at the age of 54. An enigmatic figure, but Mr. Martin brings evidence forward that proves his services to scientific surgery to have been literally wonderful.

[1] Lawson Tait. By Christopher Martin, M.B. Edin., F.R.C.S. Eng. Reprinted from "Birmingham Medical Review," June, 1931. Pp. 32. 2s.

SEROUS PLEURISY DURING THE SPECIFIC FEVERS IN CHILDHOOD

A TYPE of pleurisy associated with a very thin fluid effusion and presenting physical signs which can easily be overlooked, has long been recognised at the Wilhelmina Hospital in Vienna, and during the last year has been more closely studied. Dr. Hermann Zischinsky[1] reports that within this period 40 cases have been seen, of which 25 were associated with scarlet fever, nine with diphtheria, one with measles, and five with a double infection by scarlet fever and diphtheria. Cases have been recognised in association with whooping-cough, and Zischinsky is careful to point out that most of the patients coming to his department—the infectious fevers section of the hospital—have scarlet fever, whereas only a small number come with whooping-cough, so that he is not in a position to say which of these infections is most likely to have pleurisy as a complication. The pleurisy begins almost without symptoms save a few days' rise in temperature. Occasionally the child complained of pain in the side of the chest or, more commonly, in the abdomen. There was no dyspnœa, and cough, if any, was very slight. As a rule nothing was found on examination beyond slight impairment of the percussion note at the base of one lung, with recovery of fluid on exploratory puncture over this area. The signs were far commoner at the left base than at the right (34 left and six right in the 40 cases under review). The dullness usually only covered a few fingers' breadth but occasionally reached as high as the angle of the scapula. Auscultatory signs were usually absent, or at the most consisted of slightly diminished breath sounds over the affected area. In 30 out of the 40 cases exploratory puncture revealed fluid; usually this was quite clear or very faintly clouded and only a few drops were obtained. Examination proved it to be sterile in most cases, although once diplococci and once staphylococci were discovered. In about half the cases, a few leucocytes were found in the fluid, but as a rule no cells were seen. The duration of the pleurisy was difficult to determine with accuracy, because there were so few physical signs, but the extreme limit appeared to be five weeks, and the shortest time for the disappearance of signs after a positive pleural puncture was five days. The tuberculin reaction was tested in each case and was positive in one-third—a proportion which Zischinsky regards as about normal for a sample of the child population at the appropriate ages. He therefore thinks that the pleurisy he is describing has nothing to do with tuberculosis. Radiological examination of some of the patients was not very helpful. Negative results were sometimes obtained although exploratory puncture had been positive, and the difficulties of radiographing infectious cases made it hard to investigate this method of diagnosis fully. It is insisted that a film should always be taken, for it may reveal an exudate which was missed on screen

[1] Jahrb. f. Kinderh., 1932, cxxxv., 213.

examination. The ages of the patients here described varied from 1¾ to 14 years, with the majority between 3 and 8. The day of onset in relation to the primary fever also showed great variation. For example, in the scarlet fever cases, although these were mostly seen in the first ten days of illness, the pleurisy came on at different times from the fourth to the thirty-sixth day. Zischinsky thinks that this type of pleurisy may be commoner than is usually believed, and not only among children with infectious fevers. There are other children in whom a few days of fever, associated with loss of appetite and energy, may really be due to this cause.

LIVINGSTONE HOSPITAL REPORT

AN unfortunate occurrence at the Livingstone Hospital, Dartford, when a young probationer nurse gave a patient belladonna in mistake for syrup of figs, was investigated at an inquest as noted at the time in THE LANCET (Feb. 20th, p. 418. The hospital trustees wisely invited a further inquiry, which was undertaken at their request by a committee constituted as follows: Mr. R. H. P. Orde, hon. sec. of the British Hospitals Association (chairman), associated with a medical superintendent of a hospital, a matron, a hospital secretary, a member of the hospital committee, and a barrister. The resultant report, which was unanimous, was subsequently published in the *Kent Messenger* together with a detailed statement by the president of the hospital, who was able to say that all the recommendations in the report had been promptly carried into effect. Although directed to the particular facts upon which the coroner had commented, the report of so well-equipped a committee of inquiry formulates standards of hospital management which may be found useful elsewhere. The report points out that the ultimate responsibility for efficient management of a hospital rests with the committee of management and that this responsibility is not entirely discharged by the appointment of officials, however competent or highly qualified they may be. The committee of management has a duty to provide (*a*) organisation whereby its officials may regularly present to it reports relating to their duties, and (*b*) certain safeguards of a general character whereby it can satisfy itself regarding the state of the institution for the good management of which it is responsible. Regulations, therefore, in accordance with the general practice of other similar hospitals should at once be drawn up and put into force. Hospital administration is impeded by the absence of rules defining the duties and responsibilities of the different members of the staff; this absence of rules results in lack of proper supervision and an inadequacy of essential written records and reports. Books, records, all documents, charts, and papers relative to the treatment of patients must be properly and clearly kept by the officials concerned. Essential details should be periodically abstracted from these sources and presented to the committee of management in such a fashion that it is possible for each member to obtain a grasp of the work of the institution for the management of which he shares responsibility. As regards poisonous drugs the committee of management should provide all necessary safeguards in respect of purchase, receipt, storage, dispensing, and administration. The committee should insist that in all cases there is written authority, signed by the medical officer prescribing, for all medicines and applications of any description; this authority should be definite and applicable only to the individual patient concerned. A fully qualified person should attend the hospital for a short period daily to issue all drugs. No persons other than qualified medical practitioners or chemists should have access to the dispensary. As regards nurses the committee of inquiry, sympathetically aware of the difficulties experienced by smaller hospitals in obtaining suitable probationer nurses, recommends the committee of management to essay the gradual improvement of the status of the hospital, either by increasing the number of beds, so that it may be recognised as a teaching centre, or by affiliation to an adjacent and convenient institution already serving as a training centre.

The perfect and elaborate system of hospital rules can no more eliminate the possibility of accident than the latest Merchant Shipping Acts and regulations can remove all risk of collision at sea. But it is obvious that the absence of clear rules is dangerous in hospital administration and that, if accidents unfortunately occur, such absence is bound to attract strong comment.

TRANSPLANTATION OF THE URETERS

TRANSPLANTATION of the ureters into the bowel is so rarely performed that reports on the operation are usually concerned with single cases. Hence the record therefore of five cases by F. H. Lahey [1] forms a valuable contribution. He has followed the technique introduced by Coffey, and speaks very highly of this operation, which he considers can now be done with very reasonable safety and with the assurance of a satisfactory result. Of the five patients three survived and have been followed for periods of 22 months, 9 months, and 5 weeks respectively. One died on the ninth day after operation, of lobar pneumonia, the condition of the operative site being entirely satisfactory; the fifth survived the ureteral transplantation but died a month later from an extensive operation for the removal of bladder and uterus. The indications for operation in these five cases were early carcinoma of the bladder, a contracted bladder consequent upon tuberculous cystitis, a vesico-vaginal fistula which was not cured by four plastic operations, inoperable carcinoma of the bladder, and a carcinoma involving the bladder and front wall of the uterus. As other indications for this operation, Lahey gives exstrophy of the bladder, intractable incontinence of urine, contracted bladder following Hunner's ulcer, and occasionally the relief of pain in extensive malignant disease of the bladder. Lahey transplants both ureters at one operation, but at a discussion on transplantation of the ureters for ectopia vesicæ at the Royal Academy of Medicine in Ireland,[2] most of the speakers advised transplantation of one ureter at a time. The rectum acts as a very efficient reservoir for the urine, and leakage does not take place, the bowel being emptied of urine about three to five times a day and perhaps once at night. A. A. Lendon and H. S. Newland [3] found similar satisfactory results in this respect in their cases which survived long periods of 21 and 16 years respectively. W. C. Stevenson, when opening the above-mentioned discussion, reported that his patient, a boy of 10 years, occasionally wetted the bed at night. As Lendon's patient developed symptoms of renal infection nine years after extraperitoneal implantation of the ureter into the rectum, it will be seen that it is essential to follow these cases over a

[1] New Eng. Jour. Med., April 28th, p. 875.
[2] Brit. Med. Jour., 1927, i., 328.
[3] Ibid., 1921, ii., 38.

long period. Lahey states that with the Coffey technique there is but little likelihood of ascending infection of the kidney.

ROYAL COLLEGE OF PHYSICIANS OF LONDON: LEVERHULME RESEARCH SCHOLARSHIPS

As announced elsewhere, Lord Leverhulme has instituted two annual scholarships in medical research, the discretion of appointment and term of tenure being vested in the Royal College of Physicians of London. The scholarships are each of the annual value of £500, and the appointments will be for one year in the first instance, the renewals being at the discretion of the College. The scholars must be British subjects, and the work must have as its base some established institution, preferably in the United Kingdom, in which full facilities for the selected research are available. The scholars, who may be of either sex, must be not less than 25 years of age, and preferably possess a medical qualification. They must devote themselves to the investigation of some clinical problem of disease, as it occurs in man, and presents itself in any branch of medicine or surgery, while two scholars may combine in a joint research. It is to be noted, further, that scholars may be holding another appointment, or may be commencing private practice, provided that evidence is furnished to the College that the work of the research occupies the major part of their time. These latter conditions should be read in connexion with the age stipulation; it is clearly intended that the holders of these valuable prizes should have had clinical experience, and not have passed straight from the examination halls into the laboratories. The regulations state that each scholar shall send to the Registrar of the College an abstract of the work on which he has been engaged at the end of the first six months of each year, and a full report at the end of each completed year of tenure. Payment will be made in instalments, the first at the date of selection for the scholarship, and thereafter at intervals of six months. The scholars may publish the results of their researches, if they make known that the work has been done during appointment as a Leverhulme scholar.

Applications for scholarships should state: (1) name and age; (2) medical qualifications, degrees, &c., with dates; (3) past appointments, with dates; (4) present appointment, with salary (if any); (5) nature and scope of research proposed; (6) previous experience (if any) in research work; (7) list of papers published (if any), giving references; (8) place where proposed research is to be carried out; (9) names of two persons prepared to act as references. The applications should be addressed to the Registrar, Royal College of Physicians, Pall Mall East, S.W. 1, and marked "Leverhulme Scholarship." These should reach the College on or before July 4th.

MAX RUBNER

THE death of Max Rubner at the age of 78 years, which was announced last week, deprives Germany and the world of one of their most distinguished men of science. More than 50 years ago, as a pupil of Voit, he began researches into the fundamental processes of metabolism which soon made his name widely known, and during his long and active life his contributions to the study of the energy exchanges of the body have been of supreme importance. He earned the title of professor at Marburg in 1885, and six years later was appointed to succeed Robert Koch as director of the Institute of Hygiene in Berlin. It was he who discovered that the basal metabolism of an individual was proportional to his surface area, and his figures for the calorific equivalents of protein, fat, and carbohydrate in the body are still widely used in calculating the energy values of diets. He demonstrated that the law of conservation of energy held good in the case of animal metabolism by perfecting the calorimetric methods of Pettenkofer and Voit. Some of the expressions which he coined have become household words in the science of nutrition, for example, "specific dynamic action" to indicate the increase of metabolism caused by the ingestion of protein, and the "wear and tear" quota of protein metabolism to describe the irreducible minimum of protein destruction in an animal supplied with abundant carbohydrate food. His work was by no means entirely academic. During the Great War he was called upon by the German Government to examine the possibility of increasing the available food-supply of the population. He carried out experiments on the digestibility of bran, and of chemically treated straw and sawdust, though without success; he remained convinced that the most economical preparation of wheat for human consumption was that in which 30 per cent. of the grain was milled away. During the last 20 years the qualitative aspects of nutrition have attracted far more attention than the quantitative aspects to which Rubner devoted his remarkable talents, and the practical results of much of his work may not be as apparent as those of modern pioneers. But Rubner's name will remain as that of a pathfinder in the science of nutrition.

PHYSIOLOGICAL EFFECTS OF ALUMINIUM

FOR 30 years and more there have been smouldering doubts about the use of aluminium cooking-pots. Lately, in some quarters, these doubts have quickened into a flame, and its heat has stimulated some of the appropriate authorities to review the evidence.[1] The latest reviewer is Dr. J. H. Burn, director of the pharmacological laboratories of the Pharmaceutical Society of Great Britain, who on June 1st addressed the Society of Public Analysts on the Physiological Effects of Aluminium. The first extensive investigation of these effects, he said, was made in 1886 by Siem, working under Prof. H. H. Meyer. Siem found that doses corresponding to grs. 30 to 40 of alumina for a man had no effect when administered by mouth to cats daily for four weeks. When the aluminium salt was injected under the skin, the fatal dose varied from 0·25 to 0·30 g. of alumina per kg. These results, indicating that aluminium has some toxicity when injected but is harmless by mouth, have in substance been confirmed by many subsequent workers. Siebert and Wells examined the pathological changes produced by injecting alum and aluminium chloride; they found that anæmia was manifested after nine or ten daily injections, a fall in the hæmoglobin percentage and in the red cell count being recorded. In the spleen, pigmentation, thrombosis, and fibrosis were observed. The experiments of McCollum and his colleagues, and those of Myers and Mull, show conclusively that the addition of aluminium salts to the diet of young rats has no ill-effect on growth, health, and reproduction, even when four successive generations are observed. Those of Myers and Morrison, and of Underhill and Peterman, show that when aluminium compounds

[1] THE LANCET, 1931, i., 35; 1931, ii., 595, 662, 715.

are given by mouth to dogs, only insignificant changes in the amounts of aluminium in different tissues are found, and it follows that aluminium salts are not absorbed from the alimentary tract, except in traces. As a result of a scare in the United States, that the use of aluminium baking-powders was dangerous to health, the Department of Agriculture instituted an inquiry. The report, published in 1914, describes experiments on 26 university students carried out in three different universities, who were given amounts of alum varying from 0·2 to 10·0 g. daily for about six months. It was unanimously reported from the results of these experiments that the amounts of alum likely to be consumed as a result of the presence of alum in baking-powder—estimated as a little over gr. 1 of aluminium per person per day—are much too small to have any ill-effect. The amounts of aluminium to be found in food cooked in aluminium vessels are estimated from analyses carried out by Massatch to be about gr. 1/10 per person daily. It is seen that the dangers arising from aluminium utensils have been thoroughly investigated by many workers, on many species of animals; they have also been investigated with equal thoroughness on man. These dangers, said Dr. Burn, are non-existent; and clinical reports that symptoms of abdominal pain are relieved by discontinuing the use of aluminium must be ascribed to psychological effects, which are very common in medical practice.

OCULAR MOVEMENTS

In his Bowman lecture, delivered at the recent annual congress of the Ophthalmological Society of the United Kingdom, held at Edinburgh, Prof. J. van der Hoeve began by touching on Bowman's friendship with the leading Dutch ophthalmologists of his time. The close association of the two countries at that time in ophthalmological matters had, he said, happily persisted until now. He then gave a masterly description of the extrinsic musculature of the eyeball, of the movements executed by it and of the mechanism of these movements. He compared the movements of the human eyes with those of the rabbit, in which animal the absence of a macula and the slightness of the overlap of the visual fields causes considerable modification of the ocular movements. He showed how the action of each ocular muscle alters according to the primary position of the globe; in fact, the more the mechanism of ocular movements is studied the more complex the question is found to be, for even the simplest movement is executed by the agency of a perfectly balanced synkinesis of all 12 muscles. By means of explanatory diagrams, sketches, and photographs, Prof. van der Hoeve reviewed the experiments which had been carried out in the past on animals and men in the investigation of ocular movements. The simpler animal experiments consisted of photographing the eyes of an animal which was subjected to various movements in space on a board capable of rotation in any plane; compensatory movements of the eyes during these passive movements were elicited. Similar experiments were performed on the human subject, bound to a revolving stretcher capable of similar complex movement; the same apparatus was used in the investigation of nystagmus. More complex, though more portable, apparatus was used by the investigators, mainly Dutch and German, of the existence and position of the centre of rotation of the eyeball. As a result of his own studies, and from a consideration of the work of others, Prof. van der Hoeve has been forced to the conclusion that there is no such thing as a fixed centre of rotation for the eye, but that rotation occurs around a point most suitable and most economical for the particular movement which is being carried out. The formula which has hitherto been accepted—that rotation of the globe occurs around a fixed point, with the ocular muscles acting in a line from the centre of their origin to the centre of their insertion—must be abandoned, and the alternative accepted, that the eye goes about any particular movement in the easiest, simplest, and quickest way, irrespective of the movements which preceded it or are to follow it. The lecturer hinted at the likelihood even of separate fibres of the same ocular muscle having different actions under different conditions. At the conclusion of his lecture Prof. van der Hoeve referred to the question of periscopic spectacle lenses designed and fitted with respect to a fixed centre of rotation of the globe. The idea underlying their prescription and use was, he said, a mistaken one. So far from their being peculiarly adapted to the globe in its movements, it was likely that the globe adapted itself to the glass. Hence the desired optical result was achieved in the end.

OUR HOSPITALS

The second issue of the Hospitals Year Book[1] is far more convenient to handle than its predecessor, since the directory, which occupied more than half its pages, has been omitted. This omission allows the insertion of interesting surveys of various aspects of hospital work. The volume, which measures roughly 11 by 9 inches, is divided into two parts. Part I., which takes up 169 pages, contains a brief financial review by Sir Charles Harris, honorary financial consultant to the Central Bureau of Hospital Information; a general survey of the work and finance of voluntary hospitals in Great Britain and Ireland for the year 1930; and notes on the Road Traffic Act, 1930, on new hospital buildings, and on the relationship between the voluntary hospitals and the local authorities under the Local Government Act, 1929. The report by the Joint Committee of the Association and the British Medical Association on the payment of visiting medical staffs of voluntary hospitals is set out in full, and the rest of this part of the book is taken up with tables. These provide information on the volume of work done in voluntary hospitals, and on the income and expenditure on maintenance account, with an analysis of the sources of income and the principal items of expenditure. The average cost of in-patients and out-patients in general and special hospitals is also tabulated. Less detailed accounts are supplied of the work and staffing of municipal and public assistance hospitals, mental hospitals, and sanatoriums. Part II. of the Year Book contains, among other material, an article on road accidents by Sir Alexander Butterworth, an appreciative note on The Lancet Commission on Nursing, of which the recommendations are set out in full, an account of the work and conditions of training of a hospital almoner, a tabulated list of new buildings or extensions completed by voluntary hospitals during the last two years, and a list of memoranda on matters of administrative interest to hospitals, prepared by the Central Bureau of Hospital Information. Most of those have already been published, but Nos. 38 to 50 are here set

[1] An Annual Record of the Hospitals of Great Britain and Ireland, issued under the auspices of the British Hospitals Association and the Joint Council of the Order of St. John and the British Red Cross Society. London: Central Bureau of Hospital Information. 1932. Pp. 268. 7s. 6d.

out. They deal with contributory schemes, the domestic and nursing staffs of hospitals associated with medical schools, the conditions under which medical staffs give their services in cottage hospitals where the hospital is in receipt of income from contributory schemes, the duties of a senior resident medical officer, and so forth.

In a foreword to the Year Book, Sir Arthur Stanley points out that in 1930 the income of the voluntary hospitals for the year exceeded their expenditure by nearly £750,000, though, since this surplus was divided unevenly, some hospitals remained in dire need at the end of that year. He calls attention also to the growth of accommodation, amounting to 1500 beds in the year. That the year under review is 1930 and not 1931 is regrettable, for information so out of date, however cheering, can have little bearing on the position to be faced now that we are approaching the second half of 1932. Sir Charles Harris reproaches the hospitals themselves for this lag period, since less than half of those outside the scope of King Edward's Hospital Fund for London, which insists on early returns, sent in the annual reports from which this volume is largely compiled in the first half of 1931, and 10 per cent., including some large hospitals, delayed till November or even December of that year. He complains also of the imperfect standardisation of the records and accounts, which though rectified "for all practical purposes" in this volume, involved correspondence and further delay in the date of its issue. A plaint even more serious, because it is addressed to voluntary hospitals as a whole, and not only to defaulters, is implied in the paragraph which concludes the section of the Year Book dealing with the definition of their relations with local authorities. The intention of the Local Government Act, 1929, was obviously, as is here stated, to lay quietly and without hurry the foundations of a bridge between two organically different bodies, each now charged with more or less similar duties. But, the argument continues, no public authority having determined on a policy embodying certain broad principles can be expected to modify it in many different ways to suit the views and wishes of each individual hospital. It is essential, therefore, that the voluntary hospitals should endeavour not only to think collectively but also to strengthen the machinery for expressing their considered views. It is true that the essence of the voluntary system lies in the independence of the units forming it, and that any measure of active central control that deprived them of that independence would probably mean their end; but central control and joint action are distinct things, and just as the former would end the voluntary hospitals, the want of the latter, in the view of their own central organisation, will inevitably bring about the same result. We ourselves are not so certain of this; the voluntary hospitals have survived for long on a basis of individualism and rivalry rather than coöperation. But a plea expressed by those who have evidently sought in vain to induce them to speak with one voice should not be lightly dismissed.

It is reinforced by the coöperation achieved between those hospitals which come within the scope of King Edward's Hospital Fund for London, the annual meeting of which was held on June 7th. It is a notable achievement that this Fund has been able not only to increase its distribution, but to add substantially to reserve. The Prince of Wales, who presided at the meeting, was able to say that in 1931 the voluntary hospitals in London had, as a whole, more than balanced their budgets, the total of the surpluses (in 82 hospitals) exceeding the total of the deficits (in 57 hospitals) by £65,000. The Prince called for an intensive effort to reinforce the weak spots, while still keeping up supplies to the rest, and this message has a wide application.

INTERMITTENT GROWTH OF CHILDREN

AN investigation by the department of biology and public health of the Massachusetts Institute of Technology[1] has had some suggestive results which may have a practical application. Children in certain elementary schools were weighed regularly every month, always at the same time of day, and the extent to which growth was intermittent was noted, the children being classified on the basis of whether they failed to gain for one, two, or more months. Comparison was then made between a group who had failed to gain weight over a period of three months and a control group who had never failed to gain in a two-month period during a whole year, in respect of their health habits as regards diet, sleep, and exercise, and the presence or absence of defects or diseases. The results show that whilst intermittency in increase of weight does not differentiate absolutely between children who do and who do not require attention, yet it has significance which cannot be overlooked. Serious physical defects were nearly three times as numerous, and affected twice as many children, in the former group, while nearly three times as many also had two or more important unhygienic habits, such as insufficient protein and vitamins in the diet, inadequate sleep, or deficiency of liquid and roughage. The results point to the value of regular weighing of all children. This is, of course, a routine practice in child welfare clinics, nursery schools, and open-air schools. School medical inspection provides for the taking of heights and weights, but in many areas this is not carried out and in any case the four-yearly intervals between the routine inspections render such measurements valueless for the individual child. From the observations in Massachusetts it seems desirable to weigh all children of school age, either at monthly or at least three-monthly intervals, and to refer all those failing to gain over a period of three months or more for examination as "specials" in the scheme of medical inspection. Failure to gain, or even loss of weight, may not always be important, and must always be judged in relation to other factors; but these would be matters to be determined by the examining doctor.

Sir Henry Wellcome has been elected a Fellow of the Royal Society. Among the new foreign members are Mr. Graham Lusk, professor of physiology in Cornell University Medical College, New York, and Prof. Theobald Smith, director emeritus of the department of animal pathology of the Rockefeller Institute of Medical Research,

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Sir Arthur Keith, F.R.S., will deliver the Stephen Paget lecture at the annual general meeting of the Research Defence Society to be held at the London School of Hygiene and Tropical Medicine at 3 P.M. on June 15th. His subject is Some Aspects of the Modern Conflict between Reason and Sentiment.

[1] Turner, C. E., Lytle, Ellen, and Winnemore, Charlotte: Intermittency of Growth as an Index of Health Status. Amer. Jour. Pub. Health, May, 1932, p. 455.

SPECIAL ARTICLES

WHAT IS WRONG WITH THE MEDICAL CURRICULUM?

(A Series of Opinions Contributed by Request).

I.

By Major Greenwood, D.Sc., F.R.C.P., F.R.S.,
PROFESSOR OF EPIDEMIOLOGY AND VITAL STATISTICS IN THE UNIVERSITY OF LONDON.

The object of this symposium on medical education is, I believe, to focus the criticisms of persons whose experiences have been in different fields of medical work. The possession of a registrable diploma in medicine does not qualify its holder to be a judge of *all* the needs of *all* medical men. As a boy I lived in the atmosphere of an east end general practice; as a very young man I spent four happy years as the assistant of a great physiologist. These experiences, however profoundly they may have influenced my personality, give me no title to pose as an expert critic of either clinical or laboratory teaching. Such claim as I have to express *any* opinion upon educational questions is based upon a rather peculiar experience. It has been for a good many years part of my duty to read and criticise reports and papers dealing with an immense variety of subjects within the field of medical science. The only common factor has been that the writers had treated or, it was thought, ought to have treated some of the subject matter from a quantitative or statistical point of view. Not infrequently the purely numerical aspect has been of minor importance, my colleagues on the Statistical Committee of the Medical Research Council and I have had to consider primarily the logical value of the arguments presented. The result is that, leaving entirely out of account specific issues of private or public controversy in respect of which one's judgment is clouded by personal predilections and vanity, I have had rather exceptional opportunities of gauging the qualities of medical literature. I wish first to try to compare the general characteristics of what my colleagues and I read now with what used to come to us as individual critics 20 years ago.

RELIANCE ON TECHNIQUE.

The most striking difference is certainly an increasing reliance on technique. Even as recently as 20 years ago medical writers would still challenge peremptorily the demand that their data should be treated statistically at all. For fairly obvious reasons I do not think their objections were logical, but the point is that they did state objections of principle. That attitude has passed away. The writer, who 20 years ago would have said that statistical method was mere "mathematical" juggling having no relation to "practical" matters, now seeks for some technical "formula" by the application of which he can produce "significant" results. I am not so poor a psychologist as to neglect the consideration that a committee of experts, or even an individual "professor" of 51, will be approached more tactfully than an unknown young man of 31, but I do not think that is a complete explanation; the change is more fundamental. To put it epigrammatically, and therefore, of course, to overstate it, the change has been from thinking badly to not thinking at all, from thinking that statisticians were triflers to believing that statisticians are patentees of more or less powerful magic. The professional credit of expert statisticians has increased but there has been no dissemination among medical writers of the *principles* of statistical reasoning. Medical papers now frequently contain statistical analyses, and sometimes these analyses are correct, but the writers violate quite as often as before, the fundamental principles of statistical or of general logical reasoning.

This is not peculiar to the special case of statistics; I have sufficient recollection of the principles of physiology to perceive that this branch of science has been treated in the same way. Much more use is made of the technical vocabularies of particular branches of experimental physiology, in particular of those concerned with the nervous system, the endocrine system and general metabolism, but the method of use often moves the real adepts to laughter or tears. One finds loose verbal analogies passing as deductions and mere jargon masquerading as precise, scientific exposition.

DECREASING LITERACY.

A correlative change is decreasing literacy. Most examiners have, I suppose, noticed this. On the whole the standard of expression in the examination papers of post-graduate candidates now is, I think, not higher than that of undergraduates in the medical schools 25 years ago, and editors make the same complaint. I do not wish to exaggerate the importance of this. Many people reason well who write ill; some—not very many—write beautifully and reason badly. Perhaps the schoolmasters of one or more generations ago overstated the claims of a literary education. The case made by the teachers of our teachers against a "classical" education and in favour of the natural sciences as instruments of culture was that the average boy or girl never acquired a sufficient mastery of the mere technique of grammar and vocabulary for Latin and Greek literature to become for them an instrument of mental training. On the other hand, the "facts" of the natural sciences were intrinsically interesting to young people who might be spurred on by that interest to take pains to understand the difficult processes of thought which had led to the discovery of such exciting things. Even 50 years ago there were men of science who had doubts. I think the great physicist Tait was one of these; he argued that science was very hard, that its study was best begun at a comparatively mature age, *after* a schooling in "dull" logical, mathematical reasoning, and that difficulties did not vanish because one ignored them. Tait would have been horrified by the suggestion that an average boy or girl of from 16 to 17, whose general education was defined by the standard of a school-leaving certificate, was fit to be subjected to an exclusively scientific-technological course of instruction. Yet that is the fate of the rank and file of medical students. At the age of 17 their training begins to acquire a flavour of technicality, and within a few years it becomes wholly technical. Very few teachers of the "preliminary" and no teachers of the "intermediate" subjects are bold enough to maintain that they neither know nor care whether the "facts" and technical manipulations which are incidental to their teaching are of practical use to medical men, and that they mean to use chemistry, physics, biology, human anatomy,

or physiology primarily as instruments for training their pupils to observe accurately and think logically.

I have indeed heard "intermediate" teachers, none of whom had ever treated a patient in their post-graduate lives, waxing eloquent over the unpractical attitude of the "preliminary" teachers and urging that the students ought to be taught *useful* physics, how to wire a switchboard and handle X ray apparatus, instead of unpractical general principles. These apostles of the practical forget quite recent history. A majority of London-trained medical men over 60 were taught anatomy and physiology by surgeons and physicians. The present generation of whole-time specialist teachers of "intermediate" sciences owe their existence to a belief that the educational not the mere technical value of the sciences of physiology and anatomy was too great for it to be right to make the teaching of these subjects a subsidiary occupation. In these economically strenuous times there are plenty of clinicians who know from practical experience, better even than physiological Fellows of the Royal Society, not how much physiological technique *ought* to be, but how much *is* "practically" useful to a "doctor," and are quite willing to impart that modicum without aspiring to become whole-time university professors. In the end the men of science may find themselves relegated to research institutions and their pupils reduced to a small number of really educated people. That is, of course, quite an attractive prospect from the point of view of any scientific man who cares for his work; anybody who cares for his subject must indeed be altruistic to refrain from supporting a policy which may have such a consummation. But a majority of "intermediate" and "preliminary" teachers are, I suspect, altruistic enough really to care about the education of young people, and to believe that trying to mould the unpromising clay of a semi-literate child of 17 into something not preposterously unlike a young man or woman with a disciplined mind, is almost as praiseworthy as writing papers in the *Philosophical Transactions* or prescribing for Cabinet Ministers. Most of them recognise that the innate variation of human aptitudes is so great that while A can be trained to think by the use of the concepts and methods of, say, physics, but can make nothing of biology, to B physics are mere sound and fury, something to be memorised, but biology is fascinatingly instructive.

REMEDY—A WIDER LATITUDE OF CHOICE.

Hence it might be suggested that instead of forcing all students through the same educational mill, a wider latitude of choice should be permitted, that those who can learn to think in the biological laboratory should be encouraged to spend more time there and less in the physical laboratory, and that the key of the wards should not be a stereotyped common examination but an individualised special examination. We might even go further and support the paradox that proof of having mastered *any* branch of human knowledge, from Greek philology to pure mathematics—so far as a youth can be said to have mastered anything—should admit a student to the clinical stage. My experience of training post-graduates who have come into epidemiological and medical-statistical work from a wide range of occupations is that *any* kind of serious intellectual discipline is better than the general smattering of technical medical knowledge which is all some young medical graduates seem to have acquired. That is confessedly a narrow and highly specialised experience, but I suspect that an educational experiment well worth trying would be to dispense a certain number of good honours graduates in non-medical subjects, humanistic or scientific, from the pre-clinical stages, and to try them out ten years later against our ordinary mass products. Of course they would have had to learn, by their own efforts and in their own time, much which the others knew. But, having learned how to learn, they would, I believe, succeed.

I have the impression—it may, of course, be a mere illusion—that we medical folk are a little too prone to claim for our curriculum virtues which our opposite numbers in the legal profession do not claim on behalf of *their* undergraduate training. Three sons of a middle-class family choose, or have chosen for them, the professions of barrister, solicitor, and "doctor." In real life, as we all know, after one has been called, another admitted, and a third qualified, each must spend laborious and unremunerative years in really learning how to practise. The Bar Council and the Law Society do not, I think, pretend that the courses of training they prescribe render young people of 22 to 25 competent to perform all or even most of the tasks which an abstract "public" might expect an ideal "lawyer" to be able to carry through. I think we do, implicitly if not explicitly, make the claim that young "doctors" are in some mysterious way better equipped to grapple with quite as difficult tasks as come the way of "lawyers," than fledgling barristers or solicitors are fitted for their duties. Why? Surely not because the intellectually most brilliant member of the family is always chosen to become a "doctor." Equally surely not because the medical profession is reserved for the son or daughter who has had the best general education. Perhaps it is a relic of the priestly tradition—some of us *are* rather fond of talking about the laity with a certain superiority. The one claim as against the legal profession which can be made is that our under-graduates are put through a much fiercer technical drill. But, if that is not based upon a sound general education, we must be turning out not commissioned officers but corporals and drill sergeants, or, to change the metaphor, not motor engineers but garage hands. I do not think Mr. Bernard Shaw is the only *layman* to notice how poor a show even highly successful "doctors" often make when they are engaged in controversy or are speaking pontifically on border-line questions, such as the rights and wrongs of vaccination, psycho-analysis, or the cause of cancer. What the "doctor" says is very often not evidence; the "doctor" has never been taught what is and what is not evidence. Perhaps a little more familiarity with general principles and a little less familiarity with the technique of new "therapies" is a prescription which might be tried.

DR. BARNARDO'S HOMES: ANNUAL MEETING.—At the annual general business meeting of Dr. Barnardo's Homes: National Incorporated Association held on May 18th it was stated that 111,501 destitute boys and girls had entered the homes up to the end of last year, and that 17,019 children and young people were dealt with during 1931. In that year 1643 boys and girls and babies were admitted to the benefits of the homes—1340 permanently and 303 temporarily—and 8247 were in residence. These included 1319 children under 5; 447 sick, crippled, or afflicted children; 1124 boys and girls under industrial and technical instruction; and about 400 in training for the Navy and mercantile marine. The homes have no waiting-list and no voting system. The head offices are at 18 to 26, Stepney-causeway, London, E.1.

GENERAL MEDICAL COUNCIL

SUMMER SESSION, JUNE 2ND–5TH, 1932.

Committee Work

THE NEW PHARMACOPŒIA.

Sir Donald Macalister, chairman of the Pharmacopœia Committee, laid before the Council the completed text of the British Pharmacopœia, 1932. It was, he said, rather larger than the 1914 edition, chiefly because of the work of the League of Nations in framing international methods for controlling processes and standardising drugs. The cost of production had inevitably been greater, and the Committee recommended that the price should be 21*s*., with large-paper copies 10*s*. extra. Copies would be exposed for inspection in the offices of the Council in London, Edinburgh, and Dublin for three months before publication. An edition of 30,000 copies was to be printed of which 20,000 would be bound. The report contained a warm expression by the Committee of its thanks to Dr. A. P. Beddard, the chairman, and the members of the Pharmacopœia Commission, and to all their helpers. The Commission will remain in office until Sept. 30th, 1933, to deal with matters arising out of the new text.

TEACHING OF PREVENTIVE MEDICINE.

The recommendations of the Society of Medical Officers of Health for the teaching of preventive medicine have been under the consideration of the licensing bodies. The opinions of these bodies, with one exception, have now been received, and were submitted to the Council by the joint Education and Examination Committee specially formed to deal with the recommendations.

With five exceptions the licensing bodies appear to demand a separate examination in public health and preventive medicine, but they are disinclined to make the regulations governing admission to this examination more comprehensive or standardised. There is, however, general approval of the recommendation that teachers in the various subjects should coöperate in the teaching of preventive medicine. A number of replies state that questions upon the preventive aspects of medicine are from time to time included in the final examination. In a number of centres a local medical officer of health is taking part in the training of medical students, and in almost all cases visits to institutions of public health interest are arranged. On the number of those lectures in the course in hygiene and public health which deal more particularly with the prevention of disease in the community, there is a difference of opinion. The University of London and the English Conjoint Board do not approve of any extension of the teaching by specialists in preventive medicine, taking the view that the interests of medical education are best served by the teachers in each of the clinical subjects coöperating in the training of students in the methods of prevention of disease.

EDUCATION OF STUDENTS BEFORE REGISTRATION.

Prof. James Rice's report on the pre-registration examinations was submitted by the President, as chairman of the Examination Committee. The most significant point in Prof. Rice's classification of the various methods of the licensing bodies is the question of whether or not instruction and examination in chemistry and physics are insisted upon after the medical curriculum has been commenced. It was never, the Committee pointed out, the intention of the Council to recommend that the pre-registration examination should be the sole test in chemistry and physics. In the resolutions of 1923, it seems to be understood that there shall be further instruction in chemistry and physics "in their application to medicine" after passing the pre-registration examination, but it is by no means made clear. Much confusion has arisen with regard to the interpretation of this double reference to the teaching of chemistry and physics, and the reports make it evident that the exact meaning of this resolution must be defined. It is around the precise interpretation of these paragraphs that most of the difficulties concerning the pre-registration examination appear to centre.

The Committee considers that while the introduction of a pre-registration examination in chemistry and physics, with further instruction in them after registration, does not materially reduce the time devoted to pre-clinical studies, it can definitely improve medical education. If a student embarks upon his medical course with a grounding in chemistry and physics, it is possible for him to attend more advanced courses, which can be adapted to his special needs, during the first terms after registration. However, in order to gain the fullest benefit from the pre-registration examination, it is of the utmost importance that the post-registration courses in chemistry and physics should be adjusted very carefully to the needs of a medical student, and coördinated as far as possible with the further study of these subjects at later times in the curriculum. The post-registration courses would thus serve as a natural stepping-stone to the development and application of chemistry and physics in physiology, pharmacology, pathology, and clinical work, ensuring a fuller and more relative knowledge of the subjects and a greater cohesion between teaching and application.

OBJECTIONS TO THE EXAMINATIONS.—The Committee, in its report, reviewed the more serious objections to the pre-registration examination. The first of these is that, although a large proportion of secondary schools can teach chemistry and physics well enough for the examination, others cannot; consequently the teachers of chemistry and physics in the medical schools are confronted by students at two levels; some have passed a pre-registration examination and others know nothing about the subjects. The difficulties created by this situation have been met in various ways, not all of them satisfactory to Prof. Rice. Since, however, an increasing number of secondary schools are making arrangements to give adequate instruction in elementary chemistry and physics, this objection will probably lose much of its significance in most centres. The resolutions of the Council have not yet had their full effect upon the secondary schools. Many schools have made special provision for the science training of future medical students, expecting that their responsibility will continue.

Another objection is that to encourage the study of chemistry and physics in the later years at school may lead to too early specialisation and to the neglect of general education. The Committee admits the importance of the point, but emphasises Prof. Rice's opinion that the pre-registration standard should not be as high as that of the higher school certificate, and should be obtainable in a year. It seems, the report remarks, doubtful, considering the recent speeding-up of the school curriculum, whether the considerable advantage gained by a student who knows the main principles of chemistry and physics before entering on a medical course does not outweigh this danger. The same consideration also answers the third objection—that the pre-registration examination merely adds an unnecessary hurdle.

The Committee therefore gave as its opinion:—

1. That a knowledge of elementary chemistry and physics before entrance upon the medical curriculum is desirable.
2. That such knowledge of elementary chemistry and physics must be supplemented by further instruction and

examinations in these subjects in their relation to medicine during the first year.

3. The courses in chemistry and physics included in the curriculum should be adapted to the special needs of the medical student and coördinated with the teaching in the later stages of the curriculum.

Prof. J. B. S. STOPFORD, in introducing this report, said that the Committee was still at the inquiry stage; educational matters were involved and further information was needed from the licensing bodies.

Mr. K. W. MONSARRAT asked the Council to consider the advisability of including biology in the early training.

Sir H. B. BRACKENBURY was also of opinion that biology ought to enter into the picture of these preliminary studies. The secondary schools made considerable provision for the teaching of chemistry and physics, but not much for the teaching of biology; in the last five years however such provision as existed had been greatly extended and improved. The time, he thought, had come when the Council should say something to encourage the schools that made this provision.

OPHTHALMIA NEONATORUM.

Prof. J. B. LEATHES, chairman of the Education Committee, presented its report. The Committee had, he said, received from the British Medical Association the following resolution of its Representative Body:—

"That the Council of the B.M.A. should point out to the General Medical Council that it is desirable that medical students should have opportunities of studying the care and treatment of ophthalmia neonatorum, the best time for such instruction being during attendance on the course of fevers."

and the Committee had resolved as follows:—

"That the British Medical Association be informed that it was intended that the care and treatment of ophthalmia neonatorum should be included under 'Diseases of the Eye' in the resolutions of the Council in regard to professional education, and it was not considered expedient to refer to specific diseases by name or to define how and where opportunities for studying them should be obtained."

Mr. BISHOP HARMAN considered the answer quite a good one, but the difficulty was that it did not meet the new conditions of treatment. Nowadays infants and their mothers were removed at once on notification to special hospitals; and the student in the general hospital did not get a chance of seeing cases. It was quite impossible to impress upon students the serious consequences of the disease unless they could be shown cases.

Mr. H. L. EASON corroborated Mr. Bishop Harman's remarks from his experience at Guy's Hospital. The disease had been extinct for several years in the school's maternity district, and cases which arose outside it were sent direct to an institution.

Dr. J. W. BONE thought that ophthalmia neonatorum should be removed from the group of "diseases of the eye" and considered as a "fever."

Mr. HARMAN said it had not been intended that the teaching of ophthalmia neonatorum should be withdrawn from its proper place in the curriculum, but the special hospitals where it was treated were regarded as fever hospitals. It had been proved to be a fever in order that the Metropolitan Asylums Board should make provision for it in a fever hospital. Hence the present problem.

The PRESIDENT said it was a matter for the schools. It should be easy for a teacher to make arrangements for his students to see these cases.

MEDICINE AND THE LAW

Prompt Notification of Accident

THE Workmen's Compensation Act stipulates that an employer shall receive notice of a workman's accident "as soon as practicable after the happening thereof," unless it is found that the employer was not prejudiced by the want of notice, or that the want of notice was occasioned by "mistake, absence from the United Kingdom, or other reasonable cause." Naturally the workman's excuse for delay in notifying will usually be that he thought at first that his injury was trivial. This answer has been held insufficient in itself, though of course the decided cases turn each upon its own set of facts.

Here is a case recently decided by the House of Lords. In November, 1929, a 17-year-old workman injured his shoulder while employed in shifting pit-tubs for a colliery company. He mentioned his injury to a fellow-workman, rested several minutes, and finished his shift with assistance, then went home, told his mother, and lay down on a sofa. According to his mother he became muddled in his mind that evening, and was unable to get off the sofa, and so continued till he went to hospital in January. According to the doctor, who saw him on the day after his injury, the boy was rational and master of himself for three or four days, and seemed likely to be all right in a week. After four days the doctor diagnosed septic arthritis; the patient underwent nine operations in hospital owing to osteomyelitis, and came out a complete wreck in the following May. No notice of the accident was given before March, the boy explaining that he thought at first his injury was trivial. The county court judge found that (1) osteomyelitis developed after the injury which was therefore an accident; (2) the employers were not prejudiced by non-notification because no more could have been done for the patient than was actually done; and (3) the boy reasonably thought his accident was trivial at first, and afterwards was not in a condition to give notice; for these reasons the judge held that there was reasonable cause for the delay in giving notice. The Court of Appeal overruled this decision on the grounds that (1) notice was not given as soon as practicable, and there was no reasonable cause for the delay because the county court judge had accepted the doctor's evidence which showed that the workman was in a condition to give notice during the first few days; (2) the boy's belief that his injury was trivial was no excuse; (3) the employers were prejudiced in their defence by the want of notice because, the question being whether or not the osteomyelitis was latent in the patient at the time of the accident, it was vital for the employers to have had the chance to examine the workman as soon as possible after the injury. In confirming this decision the House of Lords has ruled that the employers were prejudiced and that there was no reasonable cause for non-notification. If the case seems a hard one, it was only reasonable for Parliament to enact, and only right for the law courts to enforce, the general principle that there should be facilities for prompt medical examination of the workman at the earliest possible moment.

Coroner on Osteopath's Treatment

At a recent inquest at Southend the deceased was reported to have had a dislike of doctors. He was attended by an osteopath. A medical practitioner

gave evidence that he had examined the patient and had advised calling in a surgeon. This led to an argument on the merits and demerits of surgeons, and the advice was not followed. Sir Bernard Spilsbury, who conducted a post-mortem examination, found death to be due to a large abscess near the kidney; had the patient taken the doctor's advice and undergone an operation, there was every chance, said Sir Bernard, of a complete cure. The osteopath gave evidence that he had provisionally diagnosed an accumulation of urine in the kidney and the pelvis. The widow apparently said that the osteopath told her as late as the morning of his death that her husband was all right and that there was nothing wrong. The coroner observed that there was no evidence which would justify the finding of manslaughter which normally follows if anyone undertakes the responsibility of caring for life and is guilty of gross negligence whereby life is lost. In the coroner's view, however, the osteopath's diagnosis was wrong; the osteopath should have seen that the patient was gravely and seriously ill and required the attention of a qualified medical practitioner. The osteopath should have advised the calling in of such a practitioner. There was nothing grossly wrong in the treatment administered by the osteopath: it was of no practical good or effect.

IRELAND

(FROM OUR OWN CORRESPONDENT.)

THE IRISH HOSPITALS SWEEPSTAKES.

THE sweepstake on the recent Derby has attracted more money than any of the previous ones. The total receipts amounted to £4,128,484, of which the share for the hospitals should be 25 per cent. or £1,032,121. Only half of this sum, however, will reach the voluntary hospitals, as the Minister for Finance is enacting a levy of 25 per cent., and the rate-supported institutions draw 33 per cent. of the remainder. The voluntary hospitals will, therefore, in fact, benefit less than they did from the Grand National sweepstake, the sum due to them from that event being £560,885. Last week in the Dail, Dr. Ward (parliamentary secretary to the Minister for Local Government and Public Health), in answer to a question, stated that the amounts available for the poor-law hospitals from the sweepstakes on the November Handicap of 1931 and the Grand National of 1932 were £236,721 and £270,158 respectively. He said that the money would be distributed according to local needs with regard to the area and the population to be served, the urgency of the work proposed, and local financial and economic circumstances. He added that if there was any delay in dealing with the distribution or release of the money it would be due to the failure of the local authorities to submit the necessary plans and specifications.

It is understood that the report of the committee of reference on the distribution of the funds available from the November Handicap sweepstake has been handed to the Minister for Justice. It is hoped that the committee may have something to say on the general question of a hospital policy for Ireland, and in particular for Dublin.

ASSOCIATION OF THE ROYAL COLLEGE OF SURGEONS IN IRELAND.

For some time past plans have been on foot to establish an Association of the Royal College of Surgeons in Ireland, and the Association was formally constituted on June 3rd, when a meeting of Fellows and Licentiates was held and rules adopted. Sir William Taylor was elected President, and Dr. J. P. Brennan and Mr. James Smith honorary secretaries. Some 500 past students are already members. On the evening of June 4th the Association celebrated its birth by the members dining together in the College. Sir William Taylor was in the chair, and there was a large number of members and guests present. The President of the College, Mr. R. A. Stoney, in responding to the toast of the College, said that it was in a most flourishing condition. They had over 60 new students entering the schools within the past year.

JUBILEE OF THE ROYAL ACADEMY OF MEDICINE.

The Royal Academy of Medicine in Ireland celebrated its jubilee on May 27th by a conversazione. Prof. T. G. Moorhead, the President, gave a brief account of the history and work of the Academy. It was founded in 1882 by the amalgamation of five older societies—the Medical Society, the Surgical Society, the Pathological Society, and the Obstetrical Society. These societies had themselves a venerable history, the Surgical Society being then in its fiftieth year while the Medical Society was a few years older. At least five of the original members of the Academy survive—Sir John Moore, Sir William Smyly, Dr. Richard A. Hayes, Dr. J. C. O'Carroll, and Dr. H. W. Oulton. In its 50 years of life the Academy had kept in the front of medical progress, and had enhanced the reputation of the Dublin school. Dr. Moorhead asked the Academy to accept, as a gift from him, a badge to be worn by future presidents. The badge is a beautiful piece of enamel work.

The President's brief address was followed by a lecture on Sir William Petty, delivered by Dr. T. P. C. Kirkpatrick. Dr. Kirkpatrick gave a very interesting account of that remarkable man, at once man of science, administrator, and geographer, holding at one and the same time the professorship of anatomy at Oxford, the professorship of music at Gresham College, London, and the physician-generalship of the Army in Ireland.

THE SERVICES

ROYAL NAVAL MEDICAL SERVICE.

Surg. Lt. D. A. Newbery to be Surg. Lt.-Comdr.
L. G. Yendoll to be Surg. Lt.
Surg. Lt.-Comdr. J. G. Holmes is appointed to *Coventry*.

ROYAL ARMY MEDICAL CORPS.

Col. J. C. Kennedy, late R.A.M.C., is placed on half pay.
Lt.-Col. P. J. Hanafin, from R.A.M.C., to be Col.
Maj. C. H. O'Rorke retires on retd. pay.

TERRITORIAL ARMY.

Lt.-Col. C. Corfield, having attained the age limit, retires and retains his rank, with permission to wear the prescribed uniform.
Lt. N. H. Watson to be Capt.

INDIAN MEDICAL SERVICE.

Lt.-Col. H. Ross retires.
Capt. J. N. Madan relinquishes his temp. commn.

ARMY EXAMINATIONS.

The results of the examination (in written subjects) of officers, with a view to promotion in the Royal Army Medical Corps, which was held in March last, are as follows: Majors J. C. Denvir, G. D. Grippen, G. Moulson, A. K. Robb, P. A. Stewart, G. K. Fulton, and J. D. A. Champney, and Capts. W. L. S. Cox and A. E. Campbell.

COLONIAL MEDICAL SERVICE.

Dr. F. H. N. Cruchley has been appointed Medical Officer, Jamaica; Dr. R. S. Begbie, Assistant Bacteriologist, Hong-Kong; Dr. J. P. Fehily, Health Officer of Port and Inspector of Emigrants, Hong-Kong; and Dr. J. H. Pottinger, Assistant Government Medical Officer of Health British, Guiana.

PANEL AND CONTRACT PRACTICE

Complaints

THE General Medical Council now receives official information of cases in which the Minister of Health has taken disciplinary action in regard to practitioners whose names appear upon the panel. We learn from the report presented by the solicitors of the London and Counties Medical Protection Society to the annual meeting on June 1st that members of that Society frequently require advice and assistance in difficulties and troubles arising out of practice under the National Health Insurance Acts. Complaints by patients to insurance committees are frequent, and when doctors concerned receive copies of the complaints made against them, with a request for their replies, it is of the utmost importance that the accusations should be effectively dealt with from the first. In the preliminary inquiries by the medical service subcommittees into complaints, legal representation is not permitted, but there is nothing to prevent a defence society from giving advice and assistance in the preparation of replies to complaints. These are of varied character, as the following examples will show:

A member applied to the Society in regard to the decision on an insurance committee suggesting that he should pay the account of another doctor who had been called in in his place and so dispose of the complaint against him. The matter was carefully gone into and the member was advised under the circumstances to make the payment as an act of grace.

A member complained to the Society that the local secretary of an approved society was in the habit of filling in the doctor's certificate form on a sick sheet, and signing the doctor's name. The matter was investigated and it was explained that the certificate was only a copy of a certificate given by the doctor. It was pointed out to the club secretary that he must in future mark the certificate clearly "copy," since otherwise it might lead to serious difficulties. The secretary promised to avoid the appearance of a forged signature in future.

A member wrote in regard to trouble which had arisen out of his marking a certificate with the diagnosis "I.D.K.," intended to indicate "Internal derangement of the knee," but which the approved society suggested must be meant to indicate "I don't know"—in other words, a negative diagnosis. He was advised that the letters "I.D.K." were not an adequate statement of the nature of the patient's ailment, although when compared with previous certificates it would be evident what diagnosis the letters were intended to indicate. A letter was drafted for him to the approved society and the matter was disposed of.

A member arranged for the removal of a very tiresome patient from his list and understood that her name had been removed. She called, however, upon him and insisted upon treatment, which he refused, as a result of which a complaint was made against the member. He was advised by the Society in the matter and the trouble was disposed of.

The Medical Defence Union in a report issued last year also impressed upon its members the need to consult the Union as early as possible in questions arising out of the National Health Insurance Acts. Although it is impossible for them to be represented at an inquiry before the medical service subcommittee, there is a stage earlier than this at which it is even more important that the assistance of a defence union should be secured. In cases of a complaint by an insured patient, the clerk has under the regulations to send on the letter of complaint to the practitioner and invite his comments upon it. Often the reply itself, if judiciously worded, and covering the essential points, will dispose of the matter and obviate the necessity for an inquiry, and it is upon this reply that members are advised to seek the Union's assistance. The solicitors to the Union point out that in appeals they have frequently been greatly handicapped by the injudicious nature of the practitioner's reply, in which he has either made unwise admissions or omitted to deal with essential points, thus providing food for telling cross-examination by the other side.

Prescribing in Manchester

A report presented by the clerk to the Manchester Insurance Committee shows the astonishing increase in the number of insurance prescriptions which pass through the pricing bureau. The increase has been going on in Manchester since 1917 when the number was 857,121, until 1927 when the number was 2,361,713. A drop took place then until 1930; but 1931 shows an increase of 78,704 over 1930, the total being 2,217,145 prescriptions. This gives a yearly average per insured person of 6·3 for 1930, and 6·4 for 1931; the cost per prescription remains the same, at 8·1 pence. For the whole country in 1930 the average was less than 3·7 prescriptions per insured person, little more than one-half the rate for Manchester. It would be interesting to know whether the attendance rate of Manchester doctors on their insured patients is also nearly double. The attendance rate for the whole country is known to be under five and above four, but the rate for Manchester has not been indicated separately. It will be remembered that with the close of 1931 the capitation system of medical benefit had been in operation in Manchester for only four years. Figures presented in this report show that in the last year of attendance basis (1927) the average number of prescriptions per insured person was 7, with an average cost per person of 5*s*. 3*d*. at drug tariff value, while on the capitation system the figures have gone down from 6·7 in 1928 to 6·4 in 1931, and from 4*s*. 10*d*. in 1928 to 4*s*. 3*d*. in 1931. The attendance basis of payment may be held to have been an incentive both to visit and to prescribe, but the maintained figures suggest either the faith of Manchester's doctors in drugs, or the determination of Manchester's insured persons to have them, unless indeed there is an extraordinary amount of ill-health needing medical attention.

A special return has to be furnished to the Ministry of Health upon prescriptions for insulin, serums, and vaccines. Of the vaccines the most costly were autogenous vaccines for 35 patients, costing £80 14*s*. 8*d*.; 75 patients received staphylococcal vaccine, costing £38, and 40 patients received anti-rheumatic vaccine, at the cost of £14 16*s*. 2*d*.

Medical Records

A leading article in the *Times* of May 16th, containing a suggestion that time, money, and temper are being wasted on medical records of panel patients, has called forth an able reply from Dr. G. C. Anderson, secretary to the Insurance Acts Committee. His letter, which appeared in the *Times* of May 21st, stated concisely and clearly what the obligations on insurance practitioners are, and how the system of records arose. Under present regulations records have to be kept, and a certain part of the capitation fee is always considered to be payment of this work. These records are often of great importance in evidence when charges are brought against a doctor of negligence, or even failure to visit. In all these cases from a memory point of view there is a great advantage to the patient as compared with the doctor, for sometimes a considerable number of weeks elapse before an investigation takes place by the medical service subcommittee, and in this time the complainant has written to the insurance committee, talked it over with relatives, and arrived at a definite impression of his story, which is, of course, to him the

one incident with which he is concerned. To the doctor against whom the complaint is made it is only one incident of many which probably happened on that particular day—e.g., one consultation or visit of many similar cases, and it is, of course, difficult for him to recall in detail precisely what happened, unless there was some salient point in the case. If, however, his medical record is filled in with notes, such as temp. 100·4 ° F.; resp., 36; pleuritic rub, rt. base, it becomes very difficult for the patient to prove that the doctor did not take any interest in the case and hardly made any examination at all. The record moreover confirms the amount of attendance given, often a matter of dispute between witnesses.

Failure to keep an adequate note of visits and attendances is moreover not fair to other doctors, for quantitative extracts from doctors' records are made usually on each inspection by the regional medical officer. He takes at random one letter of the alphabet and finds out the total attendance for the year on people whose names being with a particular letter. Suppose there are 50 record cards with names beginning with (say) B, there should be some 200 to 250 entries on all these cards; but if there are only 50 entries present it appears that the doctor is only paying one visit or consultation per panel patient per year instead of the usual (approx.) 4·5. The deficiency of entry goes to swell the cost per attendance rate, making the capitation fee appear too high, instead of indicating the correct amount. Hence the failure to keep accurate records is to be regretted in the interest of the insurance medical service as a whole, as well as of the individual practitioner.

THE BIRTHDAY HONOURS

THE list of honours issued on the King's Birthday contains the names of the following members of the medical profession:—

K.C.M.G.

Lieut.-General Sir JOHN GOODWIN, K.C.B., D.S.O., F.R.C.S., Governor of Queensland; formerly director-general of Army Medical Services.

K.B.E.

Wing-Commander LOUIS GREIG, C.V.O., M.B., Gentleman usher in ordinary to H.M. the King.

Knights Bachelor

HENRY BRITTEN BRACKENBURY, LL.D., M.R.C.S., Chairman of Council, British Medical Association.

ALBERT RUSKIN COOK, C.M.G., O.B.E., M.D., Senior physician, Mengo Hospital, Kampala, Uganda.

Lieut.-Colonel FRANCIS EDWARD FREMANTLE, O.B.E., F.R.C.S., M.P., Chairman of the Parliamentary Medical Committee; formerly medical officer of health for Hertfordshire.

Colonel RICHARD ARTHUR NEEDHAM, C.I.E., D.S.O., F.R.C.P., Formerly deputy director-general, Indian Medical Service; lately inspector of medical education in India.

ARTHUR STANLEY WOODWARK, C.M.G., C.B.E., F.R.C.P., Physician and dean of the medical school, Westminster Hospital; lately medical arbitrator for trades union and friendly societies insurance funds.

C.B. (Military Division)

Major-General HENRY EDWARD MANNING DOUGLAS, V.C., C.M.G., D.S.O., Deputy-director of medical services, Southern Command, India.

Air Vice-Marshal JOHN MCINTYRE, M.C., M.B., K.H.S., Director of medical services, Royal Air Force.

C.B. (Civil Division)

HAMILTON CLELLAND MARR, M.D., F.R.F.P.S., Senior medical commissioner, General Board of Control for Scotland.

C.S.I.

Brevet-Colonel FREDERIC PERCIVAL MACKIE, O.B.E., F.R.C.P., K.H.S., I.M.S., Late director of the Haffkine Institute, Bombay, and formerly chairman of the Plague Expert Commission of the League of Nations.

C.I.E.

Colonel HARRY MALCOLM MACKENZIE, M.B., I.M.S., Inspector-general of civil hospitals, Punjab.

C.V.O.

Commander MORTON SMART, D.S.O., M.D., R.N.V.R., Formerly medical officer in charge of the electrical department, Hospital for Sick Children, Great Ormond-street.

C.B.E.

PERCY JAMES KELLY, M.B., Surgeon-general, British Guiana.

RUSSELL JOHN REYNOLDS, M.B., Physician in charge of the department of radiology, Charing Cross Hospital; adviser in radiology to the Ministry of Pensions.

O.B.E. (Military Division)

Temporary Major ERNEST KENNETH CAMPBELL, M.B. F.R.C.S., R.A.M.C. Consulting surgeon, Western Ophthalmic Hospital; eye specialist, Southern Command.

Temporary Major HUGH DAVIES-COLLEY, B.Chir., F.R.C.S., R.A.M.C.

O.B.E. (Civil Division)

RAO BAHADUR M. K. P. AVARGAL, Director of the Tuberculosis Institute and superintendent of the Tuberculosis Hospital, Madras.

SEEMAMPILLAI FRANCIS CHELLAPPAH, M.R.C.S., Senior medical officer of health, Ceylon.

ANDREW CONNAL, M.D., Director of the Medical Research Institute, Lagos, West Africa.

RALPH STRANSHAM OLDHAM, M.D., Principal medical officer, Ministry of Pensions.

HUGH BRINDLEY OWEN, D.S.O., M.B., Medical superintendent and principal, Medical School, Mulago, Uganda.

HARRY CHAPMAN SINDERSON, M.D., F.R.C.P., Dean and professor of medicine, Royal College of Medicine of Iraq.

Major DAVID REES THOMAS, M.B., I.M.S., Chemical examiner to the Government of the Punjab.

Kaisar-i-Hind Medal (Bar)

RAI BAHADUR LALA MATHRA DASS, Assistant surgeon to the Viceroy of India.

ERNEST MUIR, M.D., F.R.C.S., Research worker in leprosy, School of Tropical Medicine, Calcutta.

Kaisar-i-Hind Medal.

Mrs. MARY O'BRIEN BEADON, M.B., Principal, Lady Hardinge Medical College, Delhi.

Miss HELEN MARION FRANKLIN, M.B., Medical superintendent, Lady Reading Hospital, Simla.

ALBERT HAILEY HENDERSON, M.D., Medical missionary, American Baptist Mission, Taunggyi, Burma.

CHARLES EDWARD VAIL, M.D., F.A.C.S., Surgeon and physician, American Presbyterian Mission Hospital, Miraj, Bombay.

LONDON AND COUNTIES MEDICAL PROTECTION SOCIETY.—The annual general meeting was held at Victory House, Leicester-square, W.C., on June 1st, when the President, Sir John Rose Bradford, moved the adoption of the annual report and balance-sheet. The work of the society, he said, was steadily increasing and many grave cases had come within its purview during the year. Some 800 new members had joined during that period, a large proportion of them immediately after qualifying, but he thought the increase ought to be still greater in view of the wastage by death and resignation. Dr. C. M. Fegen, late treasurer and chairman of council, was appointed to combine the offices of financial secretary and general secretary on the retirement of Dr. Hugh Woods.

CORRESPONDENCE

APPENDICITIS

To the Editor of THE LANCET.

SIR,—I was rather astonished by a good deal in Sir James Berry's oration on Fallen Idols, but some of the correspondence which has arisen out of this paper seems to me lamentable; I refer particularly to a letter in THE LANCET of June 4th by Mr. Paterson. Here, if I understand him rightly, he suggests waiting until the appendix has perforated in order to get a clear indication for operation; and even when this catastrophe has occurred he likes to spend several hours giving saline, glucose, and sodium bicarbonate, with the hope that symptoms will subside. I cannot think what grounds he can have for taking this line. The mortality of the operative treatment of acute appendicitis, whether we regard it as acute inflammation or acute obstruction, is nil or as near it as makes no matter, when appendicectomy is performed within a few hours of onset. After the occurrence of such complications as perforation, abscess, &c., the operative mortality is in the neighbourhood of 7 per cent. In the small number of cases mentioned by Sir James Berry expectant treatment had a mortality of 4 per cent., and I should think a larger series would show a mortality of at least 7 per cent. Where, then, is the justification for preaching delay, for that is what Mr. Paterson does? Is it not obvious that the ideal treatment is operation within a few hours of onset, and is it not our business to go on trying to achieve the ideal?

In practice this is difficult, and those who take up Mr. Paterson's attitude make it more so; attempts to encourage this attitude of mind are, in my opinion, most pernicious. If Mr. Paterson had merely said when an appendix had perforated and the trouble had been localised, or general peritonitis had developed, he would wait before advising operation, relying rather on expectant methods because the mortality of operative treatment is as high as that of the other, I think he would have had the support of some surgeons at any rate, but when he advocates deliberately (as he seems to do in his letter) the policy of "wait and see" if such things arise before removing the dangerous focus (and after all who can prophesy what will happen?) I can only hope, as I firmly believe, he will receive no support whatever from right-thinking surgeons.

I agree with Prof. Wilkie that pure acute inflammation of the appendix and pure acute obstruction of it are two different things and of the two the latter is the more immediately dangerous; but they often coexist, and if a patient presents the symptoms and signs of an acute inflammation of the appendix, when first seen, it is utterly unsafe to suppose he has not an obstructive lesion of the organ too, which is therefore unlikely to perforate. It is quite a common thing to find an acutely inflamed and obstructed appendix at the time of operation very near the point of perforation. I am, Sir, yours faithfully,

Leeds, June 4th, 1932. E. R. FLINT.

To the Editor of THE LANCET.

SIR,—May I, as a general practitioner, and therefore one of those upon whom the general public must mainly depend for any reduction in the still appalling mortality from appendicitis, trespass upon your space with a plain-spoken letter? I first was aware of Sir James Berry's lecture entitled Fallen Idols from the excerpts in the lay press. They made, and could only make, one impression on the reader and that was (1) that in the opinion of the lecturer a large number of people died yearly as the result of unjustifiable operative interference, and (2) that if death was to be avoided in appendicitis all that need be done was to await the arrival of a nice abscess, which could be safely opened and drained. When my LANCET arrived later and I read Sir James's article in toto, I found it was innocuous and even contained some sound and sage reflections. It was, in fact, a very suitable lecture with which to open a debate; but in my opinion a dangerous and retrogressive piece of rhetoric when delivered, as it was, on an occasion when it was sure to be broadcasted to the public at large.

Speaking generally the criticisms it contained were entirely destructive and no help was given to young practitioners to enable them to decide when it was safe to wait and when it was dangerous to do so. Personally I do not think any written or spoken word, or even demonstration, will enable a learner to decide. As always, "experience teaches"; but if we are to bring down the mortality of appendicitis to the irreducible minimum of deaths (and deaths in appendicitis need and should only be due to such relatively small and possibly unavoidable causes as anæsthetic deaths, deaths due to embolism, intestinal obstruction, mechanical or paralytic, and so forth) there must be only one teaching, and that the simplest—namely, to operate at once and on suspicion. Pain in the iliac fossa that is accompanied by any degree of tenderness justifies operation. The formation of an abscess ought to be looked upon as a disgrace It is better occasionally to remove an apparently healthy appendix, than to lose one patient's life from taking the risks of delay.

I am prompted to write this letter as a set-off to the eulogistic letters already published. I consider that Sir James Berry has confused and not clarified the situation, and has made things more difficult for the general practitioner in having done something towards biasing the lay mind against operation. If the mortality from appendicitis is to be reduced, it can only be done by clear and simple rules for treatment being enunciated by our teachers. Let us admit frankly that in the earliest stages we do not know in the least what is happening and that there is only one way to find out: Look and see.

I am, Sir, yours faithfully,

LEONARD LEY, M.B., B.Chir. Camb.,
Hon. Surgeon, Great Yarmouth Hospital.

June 4th, 1932.

APPENDICITIS: A FIFTY YEARS' EXPERIENCE IN ST. THOMAS'S HOSPITAL

To the Editor of THE LANCET.

SIR,—In a correspondence in your issue of May 21st, arising out of Sir James Berry's address to the Medical Society of London, a letter from me was included in which I expressed no view on the question of delayed operation in appendicitis, but suggested that an investigation into the increasing incidence of the disease should be undertaken.

In urging on the profession the importance of an inquiry into the causation of appendicitis, it has seemed advisable to give some figures showing the tax which these cases have been on the hospitals of London and the staffs who are called upon to treat them. It is quite unusual in a large general hospital for a day to pass without one operation for appen-

dicitis, and as the importance of prompt treatment is recognised (delay in many cases costing the life of the patient), few nights pass without the resources of the hospital being taxed, and the already tired residents called upon to give up their well-earned rest and perform an operation.

I have taken the numbers from the St. Thomas's Hospital reports, from the records published yearly, with the exception of the war years which caused a gap, 1916 to 1920 inclusive. These yearly reports, which were first published in 1869, have followed a uniform plan, and many lessons can be learnt from them. The volumes issued before 1893 must engage our attention, although they are not included in this communication as part of the inquiry, which is intended to give the numbers of cases of recognised "appendicitis" admitted, but is not put forward with the view of showing conclusions other than the probable total of patients for this one hospital.

Many statements have been made as to the prevalence of appendicitis in this country. The publication of a book by Dr. H. P. Hawkins in 1895 on the diseases of the vermiform appendix did much to draw the attention of the profession to the fact that cases usually known before that time as perityphlitis were really cases of disease of the appendix. They were generally of a mild character, presenting an inflammatory mass in the iliac fossa, which rarely required operation, and then only a simple incision with drainage. The cases were always admitted to the medical side and the following are the numbers recorded :—

1873 4	1882 5	1889 18
1874 4	1883 5	1890 28
1878 2	1884 16	1891 24
1879 16	1885 8	1892 20
1880 5	1886 13	1893 28
1881 10	1887 12	

In the years 1869, 1870, 1872, 1880, 1881, 1882, 1883, 1885, 1886, 1887, 1888, 1889, 1890, 1891, 1892 there were between 1 and 13 cases of peritonitis, the number increasing somewhat as the years passed, but never more than 13 in one year. In the years not mentioned there were no cases of peritonitis having their origin in the appendix.

There was a change in the character of the disease about 1893, as proved by the evidence given in the hospital reports. There was usually a more severe onset, more frequent local suppuration which required incision, also more cases in which the inflammation was not limited to the iliac fossa, and where early operation was necessary. I have arranged the number of cases under consideration in groups.

(A) Patients suffering from appendicitis during the ten years 1894–1903—1075.[1]

These numbers include 48 patients who were admitted and treated on the medical side of St. Thomas's for perityphlitis, but which were undoubtedly appendicitis. On and after the year 1895 the word perityphlitis was no longer used. The gradual increase in admissions is shown as follows in selected years: 1895, 59; 1897, 90; 1899, 141; 1903, 163.

(B) During the years following 1904–1913 the numbers were considerably larger—3872. This increase will be best shown by giving the exact figures for each year :—

1904 258	1908 166	1912 552
1905 435	1909 328	1913 571
1906 332	1910 379	
1907 375	1911 476	

[1] Mr. Cuthbert Wallace and Mr. Percy Sargent: St. Thomas's Hospital Reports, 1904, p. 413.

(C) The hospital reports were not issued for the years 1916–20 on account of the war, and the individual case reports are of doubtful value. But for the years 1914–1915 and 1921–1928 they are available and give a total of 3967 for the ten years.

(D) To the total may be added the numbers for 1929, which were 367.

The reports for 1930 have not yet been printed, but Mr. B. R. Sworn, surgical registrar, has kindly sent them to me and they amount to 200, making the total for St. Thomas's in the period 1894 to 1930, excluding the war years, 9481.

It must be remembered that these figures can only be comparatively correct, for in more recent years a new section of "abdominal pain" has appeared. In a majority of these the cause of the pain was "not proven." During one year these cases numbered 80. The admission of urgent cases of appendicitis during the war years was not in any way checked.

Thinking that it might be useful to compare the numbers treated in a recent year at other large hospitals, I made application to Guy's, St. Bartholomew's, and the London, and selected the year 1930 as most convenient to compare with those of St. Thomas's.

I have received replies from Guy's Hospital (392) and St. Bartholomew's (329), for which I thank Mr. C. E. Hughes and Mr. Girling Ball respectively. I hope to be able to add the return from the London Hospital at a later date.

I am, Sir, yours faithfully,

Harley-street, W., June 1st, 1932. W. H. BATTLE.

FORLANINI AND HIS FOLLOWERS

To the Editor of THE LANCET.

SIR,—I have recently heard from Prof. U. Carpi, of Milan, general secretary of the International Society of Pneumothorax Artificialis. He desires that it should be made public in this country that the objects of the society have been altered and that one of them is the raising of a monument in Rome in memory of Carlo Forlanini.

The International Society of Pneumothorax Artificialis was founded in 1912 and strove to diffuse knowledge and facilities about collapse therapy amongst physicians of the world. It also aimed at providing periodically for the sick a list of doctors who practised pneumothorax. Since this method of treatment is now so widely acknowledged and followed in all countries of the world it has been decided to reconstitute this society. All interested physicians are asked to write periodically to the general secretary so that he may be able to publish an up-to-date bibliography of books and articles on collapse therapy in the society's periodical bulletin. He also wants to receive for similar publication communications about pneumothorax instruments and methods of technique, notes from the inventors of these, and brief reports on congresses devoted to collapse therapy.

Prof. Carpi appeals for subscriptions for the monument to Forlanini not only from doctors in this country but also from any patient who has gained health by the method of artificial pneumothorax. I have no doubt therefore that you will allow space for this letter to advertise these laudable objects. Forlanini's pioneer work deserves wide recognition.

Prof. Carpi's address is Via Alberta da Guissano 18, Milan. I am, Sir, yours faithfully,

S. VERE PEARSON.

The Sanatorium, Mundesley, Norfolk, June 2nd, 1932.

DIPHTHERIA IMMUNISATION IN INFANTS

To the Editor of THE LANCET.

SIR,—In an interesting annotation in your issue of June 4th (p. 1210) you discuss the above important question. As regards urban districts, where about 85 per cent. of children are born with maternal diphtheria antitoxin in their blood, the conclusions arrived at in the annotation appear sound. I would point out, however, that in rural districts 70 per cent. or more of the adults may have positive Schick reactions. This means about the same proportion of infants are born with no antitoxic immunity to diphtheria. In the rural state of Kansas, for example, a most successful anti-diphtheria campaign, among the children of 1 to 14 years of age, was followed by an actual rise in the morbidity and case-mortality for diphtheria among the unprotected infants under a year old. In such districts it would appear very necessary to protect infants at birth. Two methods of procedure suggest themselves:—

(*a*) Schick testing the mothers, and immediately immunising the babies of those who have positive reactions. Schick testing the babies themselves is probably less reliable, because the infants' skin is often relatively insensitive to bacterial toxins, and may fail to react to the ordinary Schick dose of diphtheria toxin, even when there is no antitoxin in the blood. The infants, whose mothers are Schick immune, are actively immunised as usual, after they have lost their maternal diphtheria antitoxin.

(*b*) Inoculating the mothers with diphtheria toxoid during their pregnancy. The maternal diphtheria antitoxin, thus stimulated, will pass to the fœtus. Subsequently the babies themselves are actively immunised after they have been born 12 months or so.

The latter method is analogous to that said to have been used successfully in preventing umbilical tetanus, common in certain tropical regions. In this campaign the pregnant women were inoculated with tetanus toxoid.

I am, Sir, yours faithfully,

SHELDON F. DUDLEY.

R.N. Medical School, Greenwich, S.E., June 4th, 1932.

AVERTIN NARCOSIS

To the Editor of THE LANCET.

SIR,—The statement made by Dr. Kennedy in his communication on the Counteraction of Avertin Narcosis (THE LANCET, May 28, p. 1143) that lavage of the rectum is of no avail needs to be modified. It is true that the absorption of avertin is extremely quick—this is one of its many advantages—but I have noticed that on those occasions on which the solution has been returned even as late as half-an-hour after injection, or on which it has been deliberately syphoned off, for example, before the performance of a plastic operation on the perineum, there has been a definite diminution in the depth of narcosis. In one case of extreme overdose (10 times) reported to me, which occurred owing to a little difficulty with those "dashed dots," washing out the rectum was effective, and the operation was completed without mishap or complication.

Raginsky and Wesley Bourne have published the results of experiments on dogs which show that ephedrine interrupts or considerably shortens avertin anæsthesia (*Jour. Pharm. and Exper. Therap.*, 1931, xliii., 209). They have demonstrated also the value of ephedrine clinically in overcoming profound avertin anæsthesia. Dr. Kennedy's communication draws attention to another line of defence. The necessity for the use of either of these drugs should be extremely rare, for by restricting the use of morphia to suitable cases and by individual dosage the risk of overdose should be abolished.

I am, Sir, yours faithfully,

FRANCIS E. SHIPWAY.

York-terrace, Regent's Park, N.W., June 6th, 1932.

HÆMORRHAGIC PURPURA FOLLOWING SCARLET FEVER

To the Editor of THE LANCET.

SIR,—It has been brought to our notice that some who have seen our paper on Hæmorrhagic Purpura following Scarlet Fever in THE LANCET of March 5th (p. 509) have read into it a meaning that was neither intended nor implied—namely, that some tendency must be assumed to exist in the family that might conceivably affect other members.

In this family there has been hitherto no hæmorrhagic or purpuric disease within memory, and no disease in earlier generations could have been overlooked, for detailed knowledge is available of most of its members as far back as the early years of the eighteenth century.

Out of 18 references to other cases quoted in our paper, in 11 the possibility of hereditary and familial abnormalities was not thought important enough to mention. In seven others the family history was negative to any history of bleeding, purpura, or tendency thereto. In the paper reported by J. W. Miller (THE LANCET, 1905, i., 929) it is stated that two other brothers who developed scarlet fever at the same time as the patient who suffered from purpura had since recovered from the disease without any similar complication.

It is therefore clear that while in our case two members of the same family were affected, there is no logical ground for assuming that there is any hereditary or familial tendency towards this condition so far as previously reported cases are concerned.

We are, Sir, yours faithfully,

F. G. HOBSON,
A. G. GIBSON.

Oxford, May 31st, 1932.

THE NEW PHARMACOPŒIA

To the Editor of THE LANCET.

SIR,—The new issue of the British Pharmacopœia (1932) will be published on Sept. 30th, and I am instructed to say that the General Medical Council wholly reserve their copyright in the new work, and that nothing in the nature of substantial extracts from it must be published without the Council's express sanction. A memorandum relating to this matter in detail can be supplied on application. At the same time no objection will be taken to such reasonable reference to the facts and figures therein set forth as may be properly made for purposes of criticism, review, and summary, or of study and research, but no information of any kind derived from the new issue may be published in book form before Sept. 30th.

Advance copies of the text of the Pharmacopœia will be accessible on July 4th, at this office, and at 12, Queen-street, Edinburgh, and 35, Dawson-street, Dublin, for the inspection of the public, from 10 A.M. to 1 P.M. and from 2 P.M. to 4 P.M. daily excluding Saturdays, in order to give to manufacturers, pharmacists, and others interested an opportunity of ascertaining the changes that are about to be made

in official requirements, and of making the necessary arrangements to meet them.

Every person who takes advantage of this opportunity will be expected to observe the conditions above indicated, and will be required to sign an undertaking to that effect. Inquiries by letter or telephone cannot be answered.

I am, Sir, yours faithfully,

NORMAN C. KING,
Registrar, General Medical Council.

44, Hallam-street, London, W.1, June 4th, 1932.

UNDULANT FEVER

To the Editor of THE LANCET.

SIR,—In view of the interest taken in undulant fever, and the work of Dr. C. P. Beattie and others, recently published in your columns, perhaps the following figures of *Br. abortus* incidence in milks in this area may be of interest. Between 1927 and 1931 I examined for the presence of *abortus* agglutinin the sera of 760 guinea-pigs inoculated in this laboratory with milks (primarily for T.B.). The following are the results:

170 showed *abortus* agglutinin at 1 in 40 or higher = 22·3%
145 „ „ „ 1 „ 80 „ = 19%

Roughly therefore 20 per cent. of these animals showed that they had been infected with *Br. abortus*, but as the milks were nearly all mixed samples the positive percentage might actually be higher.

Unfortunately I have but a small number of controls—i.e., animals used for other purposes than milk inoculation. None of these showed a trace of *abortus* agglutinin. Brucella was repeatedly isolated from the glands, spleen, and heart blood of the animals showing *abortus* agglutinin. Milk whey frequently shows the presence of *abortus* agglutinin, but this is no evidence of the actual presence of brucella in such milks. In a small number of whey-positive milks I found just under half (45·4 per cent.) which gave no evidence of infection in the guinea-pigs inoculated.

During the above period I examined 650 human sera for the presence of *abortus* agglutinin. I found it in six cases:

Once 1 in 20 only.	Twice 1 in 80
„ 1 „ 40	„ 1 „ 160

None of these persons was suffering from any disease resembling undulant fever, and in only one case was there any history at all suggestive of a previous infection.

I am, Sir, yours faithfully,

A. H. PRIESTLEY,
Bacteriologist to the Burnley Corporation.

May 31st, 1932.

TREATMENT OF LATE RICKETS AND OSTEOMALACIA

To the Editor of THE LANCET.

SIR,—Dr. D. C. Wilson's finding that certain cases of osteomalacia in Northern India are benefited by the administration of tricalcium phosphate is in line with my experience in the treatment of this disease in the Mayo Hospital, Lahore.

It was found that in some patients (none of whom had ever observed purdah), improvement was very slow or at times non-existent under treatment with vitamins A and D and sunlight, and it was assumed that the diet taken by these individuals did not contain sufficient calcium and/or phosphorus. During the past 18 months or so I have therefore been including calcium glycerophosphate in the treatment of all osteomalacic patients [1] and the results have been beneficial, especially in the resistant cases. The usual daily dose is grs. 30, but sometimes larger amounts, up to grs. 60 daily, are given. Whatever the initial state of the blood chemistry, which varies in different patients, improvement is always associated with a normal serum calcium and a serum inorganic phosphorus as high as that found in healthy infants and young children.

It may be of interest to mention that the daily ultra-violet solar radiation in Lahore in the cold weather was found to be from 3 to 8 units by the acetone-methylene-blue gauge, the average being about 5. In the highlands of Kashmir, a State in which osteomalacia is prevalent, from 8 to 16 units a day were recorded. The occurrence of the disease in non-purdah individuals living in these regions may therefore be, to some extent, the result of a deficiency of calcium and/or phosphorus in the diet.

I am, Sir, yours faithfully,

T. A. HUGHES, M.D., M.R.C.P.,
Professor of Clinical Medicine, Medical College, Lahore.

Bexhill, May 30th, 1932.

FREE TREATMENT AT VENEREAL CLINICS

To the Editor of THE LANCET.

SIR,—With a practical experience of over 20 years in venereal diseases, I heartily endorse all that Dr. Wansey Bayly asserts in his letter to you. It is time that some committee should be set up to review the whole position. The very object for which the Government voted large sums of money has been defeated. All and sundry flock to the clinics without fear or favour. Modern youths have no knowledge of the deterrents to promiscuous intercourse that their fathers realised, with the result that instead of diminishing the incidence of venereal diseases is rising. As Dr. Bayly states, the venereal specialist is facing ruin—and for whose benefit?

I am, Sir, yours faithfully,

London, W., June 4th, 1932. M. W. BROWDY.

To the Editor of THE LANCET.

SIR,—The adoption of the points of view expressed in the letter of Dr. Wansey Bayly would undoubtedly lead to anti-social interference. If there is a group of infectious diseases whose ravages are not limited to any one section of the community, that group, beyond question, is the venereal. It is true that venereal disease is preventable, but adequate prophylactic teaching is not yet carried out—not even to the extent of instruction of students of medicine. Therefore, until this education is widely instituted, venereal disease cannot be said to be "voluntarily" acquired.

Dr. Bayly confuses two aspects of medicine: (1) the treatment of disease; (2) the income of doctors who make a living treating it. With regard to the first, it is in the interests of the nation that venereal disease be wiped out; and for this simple human work treatment should be free. The second aspect can lead to alarming implications. For, carrying this to its logical conclusion, we come to the unavoidable position that it is in the interest of venereal specialists that venereal disease should not be exterminated. I do not suggest that doctors are guilty of wishing for this state of affairs, but it seems to me that we should resist any attempt to limit

[1] Hughes, T. A., Shrivastava, D. L., and Malik, K. S.: Ind. Jour. Med. Res., 1931, xix., 593.

the present services for the treatment of venereal disease. On the contrary, we should extend them, and really make an effort to attack venereal diseases scientifically, that is, by propagating widespread information of prophylaxis for these social plagues. The abolition of venereal disease by planned measures on preventive lines should afford us pleasure which would adequately compensate for the sorrowful picture Dr. Bayly draws for us of the venereal specialist seeing ruin staring him in the face.

I am, Sir, yours faithfully,

FRANCIS LOUIS.

St. Peter's (Whitechapel) Hospital, E., June 5th, 1932.

THE SHUTTLEWORTH SAMARITAN FUND

To the Editor of THE LANCET.

SIR,—May we ask for the hospitality of your columns in order to make known, to all who have the welfare of the mentally defective at heart, that a fund is being raised to form a memorial to the work of the late Dr. G. E. Shuttleworth?

It is now nearly four years since Dr. Shuttleworth passed away, after a long life devoted to the welfare of the mentally defective, in which cause he was a pioneer. It is proposed that the memorial should take the form of a Samaritan Fund, named after Dr. Shuttleworth, which should be available to help better-class people to place their children or relatives in appropriate homes for care or training. Families of this class are prevented by many considerations from applying for aid to public assistance authorities, nor, in their case, even when such help is sought, is it easily obtainable. No other fund of the kind exists, although in many cases under post-war conditions, such help as it would offer has become essential. It is felt that this would be a particularly happy way in which to commemorate the work of one who was ever ready, with a singular generosity, to give his advice and aid to all who were in need.

Donations of £115 have already been received, and it is thought that many will be glad to have this opportunity to show their appreciation of Dr. Shuttleworth's great and unselfish services. Subscriptions should be sent to the treasurer, the Shuttleworth Samaritan Fund, 72, Denison House, 296, Vauxhall Bridge-road, S.W.1, or direct to the Shuttleworth Samaritan Fund, Martin's Bank, 68, Lombard-street, E.C.3.

We are, Sir, yours faithfully,

(Signed) G. A. AUDEN,
F. G. CROOKSHANK,
T. N. KELYNACK,
R. LANGDON-DOWN,
W. A. POTTS.

June 7th, 1932.

THE KING'S COLLEGE HOSPITAL SCHEME

To the Editor of THE LANCET.

SIR,—As a practitioner who has to earn his livelihood in the area served by King's College Hospital, I am entirely in sympathy with the remarks of THE LANCET (May 28th, p. 1172) on the scheme of contract practice inaugurated by this hospital for persons of unlimited means. In its initial stages the scheme took no notice at all of the general practitioner. Anyone with an income of thousands a year taken with a suitable pain in his abdomen could go to King's on his own account and because he had paid £11 per year to the hospital his appendix would be removed in a paying ward without charge by the hospital and at a reduced fee by the surgeon, without his ordinary medical attendant even hearing of the matter unless the patient should come to him later with a ventral hernia. Now, however, I observe an amendment to the rules that runs: "Normally patients will only be admitted on the advice of their own doctor." Not a very strong safeguard, nor really of much help to the practitioner. It does seem a pity that young consultants should not stick to consultant work, and I am convinced that the only effective method of dealing with the situation would be to notify all local medical organisations of the position, and for them to advise that no cases be sent to any consultant who is prepared to act in the way suggested.

I am, Sir, yours faithfully,

R. GODWIN CHASE, M.B., B.Chir.Camb.

June 6th, 1932.

CHLOROFORM AND THE HEART

To the Editor of THE LANCET.

SIR,—Might I suggest that Dr. I. G. W. Hill should examine electrocardiographically patients under light chloroform anæsthesia to whom a preliminary dose of atropine gr. 1/60 has been given one hour before. I have been giving chloroform to patients for the last 24 years at the Manchester Skin Hospital. These patients have, practically speaking, never been deeply anæsthetised. The majority of them move when the operation commences. During that time I have seen three cases of early chloroform collapse, that is pallor, sweating, dilated pupils, respiration so shallow as to be doubtfully perceptible, pulse so feeble as to be doubtfully palpable. Fortunately they all recovered. The interesting point is that none of these three had had a preliminary dose of atropine. I found this out on inquiry after. In each case it had been forgotten. It has been my routine practice to give a preliminary dose of atropine to all my patients whether they were to receive ether or chloroform, since 1910. From the clinical standpoint I have seen no evidence which would lead me to suppose that ventricular fibrillation is ever a cause of death in patients under light chloroform anæsthesia if they have had a preliminary dose of atropine. Actually, in practice I use morphia as well as atropine, but I have always supposed that it was the atropine that safeguarded the heart from vagus inhibition, which latter is, in my opinion, the precursor of ventricular fibrillation.

I am, Sir, yours faithfully,

E. FALKNER HILL,
Lecturer in Anæsthetics in the University of Manchester.

Manchester, June 6th, 1932.

GLASGOW'S NEW DENTAL HOSPITAL.—Last week Sir Ian Colquhoun, Lord High Commissioner of the Church of Scotland, paid a semi-state visit to Glasgow as representing the Prince of Wales to open a new dental hospital in Renfrew-street. This is the first time in nearly 300 years that a Lord High Commissioner, in that capacity, has visited Glasgow. The hospital, which includes a training school, is said to be "the most modernly equipped dental hospital in Britain." There are 50 dental chairs with provision for a further 22, and eight children's chairs. In addition to an X ray department there is a pathological and histological laboratory with accommodation for 50 students. A large theatre for general anæsthetics has recovery cubicles for men and women. The lecture theatre has sitting and writing accommodation for 200 students; two smaller lecture rooms will each hold 50 students, and there is a library and museum. The cost has been £65,000, of which £27,000 has yet to be raised.

PUBLIC HEALTH SERVICES

SCOTLAND IN 1931

THE third annual report of the Department of Health for Scotland follows the form laid down by the Board of Health in 1924. Indeed, the series from then onwards presents material for a valuable study of the evolution of health functions in a small kingdom.

The year 1931 was dominated by unemployment and the need for economy. These, in association with the extensive reorganisation involved in the new Local Government Act, made the period a difficult one; but the report shows how the work has gone on smoothly and systematically.

Housing has made progress, although the year's output of completed houses was only 10,604 as against the record of 18,240 of 1929. But there were at the end of the year 20,196 houses under construction or approved, and 1932 promises well. The falling off was very natural, since local authorities get "saturated" from time to time and changes of methods and governments tend to interrupt progress. But the Department clearly means to press the new housing and slum-clearing legislation and the velocity of production will probably be soon restored. The number of houses provided, with State assistance, between 1919 and 1931 was 128,007; and by private enterprise without subsidy 14,262. The total is 142,269.

Maternal mortality shows a drop from 6·9 per 1000 births to 5·9. Infant mortality, which stood at 129·4 per 1000 births in 1896–1900, was 85·5 in 1926–30. But these figures are still disappointing. Puerperal sepsis and puerperal pyrexia show signs of being better notified: 1104 and 1053 cases respectively. Of the 1177 puerperal fever and 906 of pyrexia notified in 1930, 863 and 358 respectively were removed to hospital. Greater advantage was taken of the assistance provided by local authorities in such cases—consultants, bacteriological examinations, special nursing, and hospital treatment. Post-natal applications at the welfare centres by mothers were mainly due to insufficiency of breast milk and to the child being under weight. "An examination of the applications granted free in Glasgow during 1930 showed that more than one-half of the applicants were in receipt of unemployment benefit."

Health supervision of the pre-school-children (1–5) shows much improvement, 71,048 being visited on an average four times each. But the total number of children in this group is about 340,000. One striking fact emerges as to the school group (5–15). The Glasgow report (reviewed below) shows that there is an increase in the heights and weights of boys and girls in each age-group according to the size of the house they live in. This confirms the report issued by the Scottish Education Department in 1907 on the heights and weights of 72,857 Glasgow children.[1] But there is a new fact about the ages 9 and 13; for in 1931 the average heights and weights of the children at those ages from one-apartment houses exceeded those of the children from two- and three-apartment houses in 1907. "That school entrants do not show quite so much relative improvement suggests the beneficial influence of modern school life."

A fresh statistical analysis of tuberculosis has been made as a first step in the investigation of the geographical incidence of tuberculosis in Scotland, with correction for age constitution of the area populations. The facts presented deserve further elaboration.

[1] H.M. Stationery Office. Cmd. 3637.

A feature of this year's report is the account of hospital reorganisation. Illustrations are given of the successful efforts to bring official and voluntary hospitals into coöperative unity. Another feature is the large results of the administration of the Highlands and Islands Medical Service Fund. This is working a transformation on the medical and nursing services. The most striking departure has been taken by the county of Caithness.

In Caithness the county council "acts as the financial authority for the surgical arrangements, while the surgeon performs all the surgical duties required in the county, in both the voluntary and the statutory hospitals. When called upon by general practitioners, he also acts as surgical consultant in the houses of the people. It has been arranged that the department will repay the council one-half of the charges incurred under the financial guarantee after deduction of sums recovered as fees for the surgeon's services."

These arrangements are interesting in themselves; the following, however, is, so far as we are aware, unique in this country. When consultant surgeons were first appointed (1924) in Shetland and Lewis, it was felt that an effort should be made to conserve the "placings" of young surgeons sent to those outposts; but, at that date, the difficulties were too great and there was no experience of the new departure. But Caithness county, along with Aberdeen, has solved the problem.

"With the concurrence of the University Court and the managers of Aberdeen Royal Infirmary, the professor of surgery at Aberdeen University nominated a surgeon for a limited period of duty in Caithness, whose prospects in relation to the University and the Infirmary will not be diminished by reason of his service in Caithness. If, as vacancies occur elsewhere, surgeons could be appointed in this way so as to retain their status at medical teaching centres, anxiety as to the future of this specialist service in Highland counties would disappear. The sympathetic consideration given to the problem by the Court of Aberdeen University and the managers of Aberdeen Royal Infirmary, which has produced the practical scheme under which surgical services are now being provided in Caithness, is deeply appreciated by the Department."

And we may add that the Department is to be congratulated on a new departure of no little importance.

SCHOOL MEDICAL SERVICE

—	No. on roll.	Average attendance	Routine inspection.	Special examinations and re-inspections	Percentage of defects.
Derbyshire .	75,073	—*	24,417	14,440	18·3
Eastbourne.	5,039	4,525	1,626	6,326	9·22
Glasgow ..	184,859	163,546	53,565	41,674	51·0

* Not given.

Derbyshire

THERE are apparently no special schools of any kind in Derbyshire (except the excellent hospital school), no nursery schools, and no open-air schools, nor have comprehensive arrangements been made for playground classes, school journeys, or open-air classes in elementary schools. The County Education Committee has offered assistance to 308 needy children to attend the many camps organised by the Voluntary Camping Association. Fourteen of the 377 elementary schools are of the famous Derbyshire open-air type, but they are not open-air schools in the full meaning of the term. To what extent these defects could be rectified even at the present time needs careful consideration. Dr. W. M. Ash says that the economic position has made it impossible to contemplate any marked extension in the service.

The dental attendances have greatly increased and the staff, working at full strength, has just been able to cope with the work. Progress is largely due to the increasing interest taken by parents in conservative dentistry. In certain areas statistics showed that where the percentage of consents for conservative dental work was high, the percentage of cases requiring a general anæsthetic was low, and vice versa, and here, as in many other areas maintaining an efficient dental service, the interference with routine caused by the casual patient was much felt. A striking illustration of the importance of oral hygiene is given: Out of 540 children referred by assistant school medical officers for dental treatment prior to tonsillectomy or prior to a period of observation for enlarged tonsils, 444 had previously refused dental treatment or were school entrants. This finding reinforces Dr. Ash's plea that whenever possible conservative methods, including dental treatment, should be tried before tonsillectomy is carried out.

Dr. T. E. A. Carr, the oculist, points out that while tests of refraction and the provision of glasses increase the patient's comfort and efficiency, the treatment of conditions such as corneal ulcers and early cataracts is even more vital since it may prevent actual blindness. The early treatment of squint is also of paramount importance in the preservation of vision. Of the three lines of attack, (1) correction of refractive errors, (2) orthoptic exercises, and (3) operation, orthoptic exercises are difficult and costly to provide, and yet for the real cure of squint the training of the latent fusion faculty is fundamental. The orthopædic scheme, including the special hospital at Bretby, is functioning well. A full report on postural defects by Dr. W. J. Pierce has had to be condensed; he points out the insidious onset of postural deformities, the ease with which most of them can be corrected by treatment in the early stages, and the difficulties of treatment if it is postponed until deformity has become marked.

The principle of early detection and correct treatment that is the keynote of the report is exemplified in Dr. H. S. Bryan's account of the work of the Child Guidance Clinic.

Eastbourne

Only one notable development of the school medical service at Eastbourne is recorded by Dr. W. G. Willoughby, and that is the increase of sessions for dental treatment from two to six half-days weekly. In other matters there has been an arrest; for example, the replacement of the old buildings at the open-air school has been postponed owing to financial stringency, though the main classroom and the rest shed badly need attention. This school, like the special mental defectives school, was a temporary building, adapted from army huts in 1920, an additional up-to-date classroom being added in 1929. It has proved a helpful adjunct to the school medical service, especially with children suffering from general debility and malnutrition; a few cases such as those of "observation mentality" or "post-rheumatic fever" would seem less likely to benefit from the special conditions provided in this school. The mental defectives' school continues to be useful, though not really fitted for its purpose. It is satisfactory to learn that for the first time since medical inspection was instituted no case of uncleanliness was found at the routine inspections; at the surprise inspections by the nurses 497 children were found to be unclean. No account is given of the progress of the health propaganda described in previous reports, nor is there any mention of the special class for stammerers that was formerly described by Dr. Coghill. The report of the organiser of physical training has not been printed. Dr. Willoughby's report for 1931 is thus less complete than was its predecessor.

Glasgow

The arrangement of this report does not take exactly the same form as those of English areas, and the figure for defects is probably not comparable. It is written by Dr. G. Arbuckle Brown with an introduction by Dr. A. S. M. Macgregor, and deals with the work done during the first complete year since the transfer of functions to the corporation under the Local Government (Scotland) Act of 1929. The effect of the coördination of the education health service with the other medical services of the corporation is held to be profound and beneficent. One result is that the medical supervision of the child from birth till the end of school life becomes the function of a unified service. Other results include:

"The transfer of operations for tonsils and adenoids to the Western District Hospital; the more expeditous admission of necessitous cases for operations and medical treatment to the general hospitals; the surgical treatment of marked orthopædic deformities not formerly provided for, and the extension of all branches of orthopædic treatment and medical gymnastics; the supervision and control of infectious disease in schools by means of definite arrangements with the divisional medical officers of the health department; the housing of school treatment clinics in child welfare centres; the treatment in school clinics of minor ailments of children referred by the child welfare service; coördination with the clinic for the blind under the Blind Persons Act; coördination with the mental clinic for the supervision of mentally defective children; and in general, a closer, more intimate, and effective linking up of the various medical services necessary for the welfare and supervision of child life in Glasgow."

The senior assistant medical officers of the education service, in coöperation with the sanitary inspectors of each area, have begun a detailed and fruitful survey of the sanitary conditions of the schools, and a still more interesting feature of the new system has been the plan of inquiries embracing both the school and the home aspects of child life. One of these inquiries affords exact statistics of the physique of the children at various ages during various periods, divided into groups according to whether the families occupy houses with one, two, three, or four rooms. The arrangements for one sex and age—i.e., girls of 13—are set out in the following table:—

Age.	Year.	Heights. Number of apartments.				Weights. Number of apartments.			
		1.	2.	3.	4.	1.	2.	3.	4.
13	1907	53·9	54·7	55·6	56·4	71·9	73·9	76·3	79·3
	1924	55·2	54·6	56·5	57·1	76·3	76·8	80·0	80·8
	1931	56·0	56·8	57·5	58·5	79·5	82·0	84·3	88·3

The degree of improvement which has taken place in general is encouraging; it is of interest to note that the average heights and weights of the children from one-apartment houses in 1931 are higher than those of the children from the two- or three-apartment houses in 1907. In the 5-year age-group the children from the one-apartment houses in 1931 were taller than those from the houses of two apartments in 1907, but fell short in average weight. These observations are held to indicate that the improvement in height and weight is more marked after some years of school life.

Another inquiry shows the fall in prevalence of rickets, the war years being omitted, which in the three years ending 1914 was recorded as 9·0 per cent. of the school population, in the three years ending 1924 as 5·7 per cent., in the three years ending 1929 as 4·2 per cent., and in 1931 as only 3·0 per cent. Another set of statistics show the percentages of school-children living in houses of one, two, three, four, or five or more rooms. Comparisons with previous years show that housing conditions in 1931 are much better than they were 20 years ago, except in the single-roomed house where they appear to be worse. Lastly, a record of the milk consumed daily per head has been compiled. This works out to an average of 0·36 pints for children in the poorest schools, 0·47 pints for those in "medium" schools, and 0·62 pints for those in the better-class schools. In 60 families no fresh milk was used.

OBITUARY

REMINGTON HOBBS, M.D. Brux., M.R.C.P.Lond.

Dr. Albert Remington Hobbs, who had been medical superintendent of St. Mary Abbot's Hospital, Kensington, for some 15 years, died on May 30th after a serious operation. He was at work less than a fortnight before his death.

Remington Hobbs was trained at St. Mary's Hospital, whence he qualified M.R.C.S., L.R.C.P. in 1901, becoming M.R.C.P. in 1930. He took the M.D. Brux. with honours in 1908. After qualifying he held appointments at St. Mary's Hospital as house surgeon, house physician, resident obstetric officer, casualty officer, and resident anæsthetist. He worked also for a time as assistant demonstrator of pathology and as ophthalmic house surgeon at St. Mary's, and as clinical assistant to St. Peter's Hospital and to the Paddington Green Children's Hospital and the Samaritain Free Hospital. Dr. Hobbs had thus gained exceptionally wide experience before his first administrative appointment as assistant medical superintendent to the Paddington Infirmary. He held this post until 1907 when he started general practice in Golders Green. On the outbreak of the war he left his practice at short notice to serve in the Army. He was, however, soon invalided out, and held the post of medical superintendent at Bethnal Green Infirmary before being appointed in the same capacity to St. Mary Abbot's Hospital, Kensington, where he became well known especially in connexion with the treatment of puerperal sepsis. He first became interested in the subject 13 years ago, and eventually worked out a line of treatment which proved extremely successful in his hands. This was based on his conviction that puerperal sepsis is, for the most part, an autogenous infection superadded to imperfect drainage. He showed that latent bacilluria is common in pregnant women, that puerperal sepsis can exist without pyrexia, that after-pains are abnormal and significant of sepsis, and finally, that with perfect drainage brought about by intra-uterine injections of glycerin many cases are cured. He believed that in many of the more serious streptococcal infections early uterine drainage would prevent the spread of infection and a general septicæmia. So enthusiastic was he in this special work that he started a clinic for teaching his methods, and during the last ten years medical men from almost every country in the world have attended his demonstrations. His methods were not at first generally accepted, but his enthusiasm remained undiminished and it was a source of great satisfaction to him in recent years to find a growing interest among gynæcologists in his work. He rejoiced at his appointment as Hunterian professor of the Royal College of Surgeons for 1932, as giving him an opportunity to give further publicity to his methods. Three days after his fatal illness began he was awarded the Triennial Gold Medal of the West London Medico-Chirurgical Society for distinguished work, and the news of this honour greatly comforted him during his last few days of life. In addition to his official appointment at St. Mary Abbot's Hospital, he was consulting gynæcologist to the Royal Borough of Kensington. This appointment was welcomed by the medical profession in the district, for he had their entire confidence.

ALBERT REMINGTON HOBBS.

A colleague writes: "Remington Hobbs was not only a medical man keenly interested in the specialty he had made his own, but also a splendid sportsman. He and his brother (E. C. Hobbs) were for some time the first wicket batsmen for St. Mary's Hospital, and Remington made a fine century against St. Thomas's when St. Mary's won the Hospital Cup in 1899. With his brother he put on 104 runs for the first wicket when playing for St. Mary's against Dr. W. G. Grace's London County Eleven in 1900. Afterwards he played for the Middlesex Second Eleven and for some years for Buckinghamshire, and he was playing in London club cricket and making good scores until two years ago. Hobbs was a lovable person and a delightful companion. He was so good natured, so kindly, that it was difficult to differ from him. His home life was particularly happy, and much sympathy will be felt for his widow and his two boys."

Dr. Leonard Colebrook writes: "It says much for his enthusiasm and industry that Remington Hobbs, while carrying all the cares of a large poor-law infirmary, was able to make a name for himself as the advocate of a particular form of treatment. Instillation of glycerin into the infected uterus had occasionally been tried in the past, but had not attracted special attention. Indeed, at the time (1920–23) when Hobbs became interested in the puerperal infections almost every remedy had become largely discredited. Inspection of the genital tract to determine what was the condition of the cervix and vaginal vault was seldom made, and if there was obstruction to the outflow of the discharge through the cervical canal, it was scarcely ever recognised. To Remington Hobbs, more than to any other man, is due the changed attitude with regard to this condition. He recognised that drainage, both of the uterine cavity and of the infected tissues, was a vitally important factor in recovery, and that the application of glycerin was likely to facilitate such drainage. Having satisfied himself that dramatic improvement in the patient's condition did frequently follow the instillation of glycerin he set himself to perfect the technique of the operation so that it could be carried out, if necessary, several times a day without undue pain or discomfort for the patient. It is not too much to say that he set up a new standard of skill (and of gentleness) in the examination and treatment of the patient with a postnatal infection. Not content with the improved results in the cases of established infection admitted to his hospital, he worked unceasingly by the same methods to control the mild pyrexias in his own maternity department—and also to bring the success of the 'glycerin treatment' to the notice of others.

"To many his single-minded enthusiasm and the orderly—almost oratorical—presentation of his thesis carried conviction. Others asked for statistical proof of the success of the method. Such proof could, however, scarcely be expected. The group of puerperal infections is too heterogeneous, and the tendency to spontaneous cure in the less severe cases is too high to admit of statistical treatment. Probably the careful study by H. J. Phillips, of Manchester (presented to the Section of Obstetrics of the Royal Society of Medicine in 1926), comes nearer than anything else to statistical proof of the value of the method. As so often in medicine, we have to proceed in the absence of complete proof, and the safest way is to be guided by such principles as appear to have a sound basis. To those who are familiar with the filthy condition of the infected uterine cavity post mortem (comparable only to the filthy wounds seen in the earlier days of the Great War), and are familiar also with the convincing experiments of Sir Almroth Wright on the importance of maintaining a flow of 'uncorrupted' lymph through infected tissues, there can be little doubt that the frequent instillation of a lymphagogue such as glycerin into the infected uterus must frequently be beneficial. While we may hesitate to go all the way with Hobbs in the interpretation of his results, most of those who have had experience of a number of cases treated by his method are well satisfied of its advantages. Personally, as one who has watched the march of events in connexion with puerperal fever over a number of years, I venture to assert that Hobbs's work has contributed more than anything else towards progress in the control of these puerperal infections."

ANDREW BOUTFLOWER, M.R.C.S. Eng.

Dr. Boutflower, who died at his home at Kersal on June 1st, was for many years senior surgeon of the Salford Royal Hospital. He was born at Salford in 1845, and was educated in Dublin and Manchester. On qualification as M.R.C.S. and L.S.A. in 1868 he became house surgeon at the Manchester Royal Infirmary. His father, John Boutflower, F.R.C.S., who had been surgeon to Salford Royal Hospital for 44 years, resigned in 1870, and the son took his place, remaining on the active staff from 1871 to 1911 when the institution was enlarged. He was also honorary surgeon to the Chetham Hospital, visiting surgeon to H.M. Prison, Strangeways, and medical visitor for lunatics for the county magistrates. He had a large practice in Salford and the neighbourhood. His chief outside interest centred in the Manchester Cathedral, of which he was at one time church warden. The name of Boutflower carries one a long way back in the medical history of Salford. John Boutflower lived from 1798 to 1889, and father and son between them served the Royal Hospital for 84 years.

CUTHBERT CHRISTY, M.B. Edin., F.R.G.S.

Dr. Cuthbert Christy, who died in the Belgian Congo on May 29th, was born at Chelmsford, educated at Oliver's Mount School, Scarborough, and went on to Edinburgh to study medicine, graduating in 1892. For three years he travelled in South and Central America, then joined the West African frontier force in Northern Nigeria, and later assisted Haffkine in his Plague Laboratory at Parel, Bombay. A short period as civil surgeon in lowland India was followed by extensive travel in the northern mountains, and in 1902 his rich experience and qualification led to his appointment as a member of the first Sleeping Sickness Commission in Uganda, and later of an expedition sent out to the same region by the Liverpool School of Tropical Medicine. On returning he lectured at this school for three years, followed by a further period of travel in East Africa and Uganda. During the war Dr. Christy became adviser for malaria in the East Africa expeditionary force with charge of the malaria hospital at Dar-es-Salaam. After the war he continued his expeditions in Central Africa, collecting specimens of rare animals and birds. Recently he had been serving on a Commission appointed by the League of Nations to inquire into the existence of slavery in Liberia. He was a great traveller, naturalist, and humanitarian.

MARCUS SINCLAIR PATERSON, M.D. Durh.,

LATE MEDICAL SUPERINTENDENT OF COLINDALE HOSPITAL.

WE regret to announce the death on June 1st, in his 62nd year, of Dr. Marcus Paterson, who will long be remembered for his pioneer work on the institutional treatment of tuberculosis.

Marcus Sinclair Paterson was born in Scotland and on leaving school spent an apprenticeship of two years in the shipyards of Messrs. Inglis and Co. at Glasgow. Deciding then upon a medical career he entered as a student at St. Mary's Hospital and qualified as M.R.C.S., L.R.C.P. in 1894, and after further work at Newcastle Infirmary graduated M.B., B.S. Durh. in 1895. He then spent three years as a ship's doctor in the service of the P. and O., on leaving which he became house physician at the East London Hospital for Children. Here he worked in particular under the late Dr. Eustace Smith, to whose clinical judgment and sound methods he always attributed a great influence on his own life work. That work he may be said to have started when he was appointed resident medical officer at Brompton Hospital for Consumption. He threw himself into the conduct of the institution with zeal, and made a great impression upon the staff by the thoroughness of his methods, so much so that Sir James Kingston Fowler, with whom he came into close contact, said of him "if there were more Marcus Patersons there would be fewer cases of tuberculosis."

DR. MARCUS PATERSON.

[Photograph by Elliott & Fry

At Brompton he showed his powers of organisation to such effect that the authorities had no hesitation in appointing him as medical superintendent at the Frimley Sanatorium when that institution was opened. Their prompt choice was fully justified, for Paterson's gifts found full scope there. He became a prominent member of the small group who established the lines of sanatorium treatment of tuberculosis in this

country. While the original inspiration of the methods for which he became so well known can be traced to the teaching of Otto Walther of Nordrach, Paterson's experience, acquired in the yards and drawing office of one of the largest Tyne-side shipbuilding firms, enabled him to view the problems of tuberculosis from the angle of the workmen. Like Walther devoid of deep scientific knowledge, he had a great fund of common sense and a capacity for seeing essentials. Walther relied upon graduated walking as best qualified to bring the convalescent tuberculous subject into the physical health necessary for return to work. Paterson, in association with Arthur Latham and Conyers Inman, substituted for walking a system of graduated exercises. He recognised that the working man would have a much better chance of obtaining and retaining his occupation if he could be discharged from a sanatorium with a proven capacity for performing his ordinary tasks, and he and his collaborators at Brompton were able to bring forcible arguments forward in proof that graduated labour was as serviceable as walking in the treatment of the convalescing subject. Paterson was fortunate to be linked in this work with Inman, who was an accomplished and enthusiastic bacteriologist, and who demonstrated by immunity reactions the beneficent effects of controlled auto-inoculation. In one form or another the principles thus laid down were adopted in all British sanatoriums which provided for the industrial classes. It required courage and a high conviction of the soundness of both theory and practice to induce patients with lung disease, who were taught to rest and to avoid any strain, to engage in physical labour, however light, and it is there that Paterson's personal qualities and past experience stood him in such good stead. He was loyally supported by the patients at Frimley who willingly coöperated in the methods—indeed Latham once testified that the difficulty was to restrain them in their desire to proceed quickly up the grades instituted. The actual pattern of labour which Paterson first laid down has since been modified, its seven grades having been reduced to four and their severity mitigated; but the workshops and industrial settlements of the present day are its lineal descendants. A description of the actual methods as originally laid down will be found in his monograph "Auto-inoculation in Pulmonary Tuberculosis" and briefly in the "System of Treatment" by Latham and English.

His experience in the engineering shops and on board ship had convinced him that to be out of work was worse than to be suffering from tuberculosis, and that to keep the quiescent case healthy on discharge from the sanatorium it was essential that he should obtain remunerative work, and, if possible, the work to which he was accustomed. The usual recommendation that a town worker should attempt to obtain employment on the land or as a seaman, because of the open-air environment, he contended to be entirely wrong, for the labour would not necessarily be lighter while inexperience would tend to make it harder. Hence with vague recommendations that the tuberculous subject should "go abroad" he had no patience, pointing out both how difficult it must be to secure with certainty any work abroad, and how much easier it is to starve anywhere else than in England.

The excellence of Paterson's work was recognised at the International Congress of Tuberculosis at Washington in 1908 where the first prize for an exhibit of sanatorium treatment was awarded to the Frimley Sanatorium, and the first prize for hospital treatment of tuberculosis to the Brompton Hospital, the accompanying essays being the work of Paterson, of Latham, and of Inman. For two of the essays Paterson was awarded first prizes. From Frimley, Paterson went in 1916 as medical director to the King Edward VII. Welsh National Memorial Hospital, and after three years' busy work there was appointed medical superintendent of the M.A.B. tuberculosis hospital at Colindale, where he remained for the residue of his professional life, and where he continued to display the same practical interest in the individual patients, estimating their chances by their capacities and attainments, and sparing no effort to help those who were prepared to help themselves.

Throughout this sequence of important institutional appointments Marcus Paterson was as popular with his colleagues as with the patients. He was a man of a robust and engaging personality, tenacious of any purpose he had in view and untiring in carrying out his ideas, while he had a ready wit and facile repartee. His mordant criticism, where he thought that criticism was due, was well shown in a book, published in 1920, and entitled "The Shibboleths of Tuberculosis," in which, one after another, much of the routine teaching of an older generation was dissected and consigned to oblivion. He stamped as shibboleths such things as the belief that cod-liver oil was essential in the treatment of tuberculosis, that the victim of hæmoptysis must be confined to cold food and drink, that tuberculous empyemas should be opened, and, especially, that change of climate is good for tuberculosis. All the strictures in this valuable and entertaining book were not acceptable, and of some it may be said that they did not deserve to be accepted, but as a whole the work was as sound in teaching as entertaining in style. In later years a motor accident and undulant fever interfered with his activities, and he retired at an age when many men are able to proceed in the fulfilment of earlier promise. Paterson's life-work ceased prematurely, but he had done enough to secure a place for himself in the ranks of his important specialty.

In private life Marcus Paterson was a deservedly popular man; his blunt exterior covered a sympathetic disposition, and he gained the high regard of those with whom he worked and of those with whom he spent his leisure. At the Savage Club, where he was honorary treasurer, he was a highly popular member, while his hobby as a dog-breeder gained for him many prizes and many sporting friends.

PAUL MORGAN CHAPMAN, M.D. Lond., F.R.C.P.

WE regret to announce the death of Dr. Paul Chapman which occurred suddenly at Chatham, on Tuesday, May 31st, in his eighty-first year.

Paul Morgan Chapman was educated at Shrewsbury and University College Hospital. He took the English double diplomas in 1875 and two years later graduated as M.B. Lond, proceeding to the M.D. three years later. For a brief time he was in private practice, unattached to any hospital, and more devoted to the study of Elizabethan literature and classical music than to that of clinical medicine, but he made a reputation as a coach and especially women students sought his assistance. An introduction to Burdon-Sanderson, however, gave him at this time a taste for experimental physiology, and a series of observations on the heart, which accorded with that great physiologist's conclusions, led to an immediate and enthusiastic interest in cardiac disease; then he was invited by Bristowe, whose text-book

of medicine which 50 years ago was read by every student had recently appeared, to revise the article on heart disease. In 1894 he delivered the Goulstonian lectures on the Physics of the Circulation. These formed an accurate and scholarly résumé of the knowledge of the day, and were prefaced by an expression of gratitude to Burdon-Sanderson for encouragement received in the experimental work and its graphic representations. These lectures closed with an acknowledgment to the Board of the Hereford General Infirmary for their enlightened assistance, and in those words we have a clue to the reason why Chapman's striking entrance into the field of clinical research was not followed by commensurate results.

The following has been supplied to us by an intimate friend :—

"At University College, over 50 years ago, a friendship began between Paul Chapman and myself which remained unbroken to the last—indeed, he had proposed visiting me on June 1st, just 48 hours before the fatal attack. That he did not take scientific honours at the College was due to no lack of ability, nor to wasted opportunities in the ordinary way, but to his love for Elizabethan literature and music. In the pursuit of the former much of his time was spent in the British Museum over old plays which might have been given to his medical studies, but it was not in a nature of his kind to keep his nose to the grindstone. His tastes from boyhood had taken him to the poets and as a child, it seemed, he would take a volume of Shelley to bed, and Shelley remained to the end his favourite poet, from whom he could repeat long passages even in his last years, as he could with Shakespeare's sonnets and plays. Soon after taking his degree he repeated, at the request of Burdon-Sanderson, a series of confirmatory observations on the heart, which gave him a taste for experimental physiology, especially in its application to cardiac disease. Partly as an outcome of this work he suggested to Bristowe that the article on heart disease in the recent text-book might be improved, and the criticism being accepted by the author Chapman was asked to write a substitute, which he accordingly did. It looked at this time as if a career were opening to him in London and, had he been able to pursue his opportunities, he would, I have little doubt, have taken a position of prominence, especially in cardiac maladies. Unfortunately all such hopes had to be abandoned for a recurring conjunctivitis, owing largely to the dust in London, led Mr. Tweedy (Sir John) to advise his seeking some place in the country. This, for one who was leaning towards a consulting practice and who enjoyed the contact with others like situated was a serious blow, but he recognised the wisdom of the advice. The senior physician to the Herefordshire General Infirmary had just died and Chapman applied for the hospital appointment, obtained it and started in Hereford as a consultant in 1886, and practised in the city until his retirement in 1919. During the war—his three sons were serving—he was physician to the V.A.D. Hospital at Hereford and consulting physician to another institution and for these services was awarded the M.B.E.

"Throughout his career he kept himself informed of the literature of cardiology in this country and abroad, and his position was honourably recognised by his appointment as Goulstonian lecturer at the Royal College of Physicians of London, on the Physics of the Circulation. The lectures were models of clearness, for Chapman possessed notable literary attainments. He was at one time a frequent contributor to the *Nineteenth Century*, and until recently he contributed articles to the *Yorkshire Post* in style much like those of the third 'leader' in the *Times*, in which he displayed a remarkable knowledge of ancient and modern literature. The titles of some of these are suggestive—e.g., 'On Staying at Home,' 'The Grace of the Crinoline,' 'Heroic Metre,' and 'Songs of Spring'—the last written just before his sudden death.

"After his retirement he lived with his wife in part of the Old Rectory at Cascob, on the borders of Radnor Forest, where his wife, the daughter of a former rector, was born. Here he wrote a 'Foot Guide to Radnor Forest,' which was notable, not only for its practical information, but for its wealth of historical allusions and its poetic description of the beauties of the forest. He was a keen fly fisherman and up till recently would spend a week on one of the Welsh rivers, usually with his son, where his skill in guiding a boat through the upper Wye with its many 'streams' and his powers as an oarsman were notable. He was a strong swimmer and, leaving the boat, with his companion (the writer) would thus propel it through the smooth water in Symonds Yat. He was also above the average as an amateur actor, and in support of his hospital compiled, organised, and directed plays, which were performed on a lawn with suitable background, taking himself a leading part. His rendering of Malvolio was an excellent performance, and in order to perfect his part he took advice and help from a prominent London actor. He played the 'cello in a musical society, which he established in Hereford."

The loss of his eldest son in the war was a severe blow to Chapman. He is survived by two sons, both of whom are in the Royal Navy.

ROYAL FREE HOSPITAL

ON June 8th the Queen visited the hospital to open the Queen Mary Building (Albert Levy Wing) and to lay the foundation-stone of the extension to the nurses' home. The extension was much needed for the better accommodation of the maternity, antenatal and postnatal departments, and for the orthopædic and physical medicine units. It was also necessary to provide new kitchens and to install a new heating system. The total cost of the new building and its equipment was estimated at some £250,000. After subscriptions amounting to about £60,000 had been secured, Sir Albert Levy, the hospital treasurer, contributed £55,500 on the understanding that a substantial section of the building should be constructed and brought into use without delay.

The entrance to the Queen Mary Building from the body of the hospital is in a small inner court whence a flight of wide stone stairs leads to a pillared hall. Through this hall may be approached the administrative quarters of the maternity unit, which includes an antenatal and postnatal unit and occupies half of the ground floor of the wing. The various rooms are built to open out of one large central waiting hall, which is fitted with a coffee bar. Mothers can easily be called from this hall to the registration counter, the case-taking room, the separate dressing cubicles, and cloakrooms, and directly from these to the six consulting and examination rooms. The unit has a separate dispensary and a social service room. For students a library and a lecture room have been provided.

The other half of the ground floor of the wing, with the corresponding lower ground floor, houses the department of physical medicine and orthopædics. Curtained dressing cubicles adjoin the treatment rooms. In the orthopædic room is a couch for manipulative surgery and minor operations. Curative exercises are carried out under the direction of the orthopædic surgeon in a fully equipped gymnasium.

The heating system adopted throughout is that of steam-heated panels built into the walls. In the wide central court round which the wing is built, a hard tennis-court has been constructed for the use of the nurses and medical staff.

Nurses' Home Extension.—The first block of the Nurses' Home was erected at a cost of £60,000. It is now necessary to complete the Home at a further cost of £60,000 of which, according to the annual report of the hospital for 1931, only £22,500 is in hand ; a further £30,000 is to be taken from investments, and a balance of £7500 has still to be obtained.

The Queen was received by Lord Riddell, the President of the hospital, Sir Albert Levy, the hon. treasurer, and Miss G. M. Bulman, the matron.

CROYDON GENERAL HOSPITAL.—It is proposed to extend the accommodation of this hospital from 130 to 190 beds, including 17 for paying patients. The cost will be £37,000, of which £17,000 is in hand.

MEDICAL NEWS

University of London

At recent examinations the following candidates were successful :—

Honours.—T. A. L. Davies (*c*, *d*, *e*, University Medal), St. Thomas's Hosp.; K. H. C. Hester (*a*, *c*), London Hosp.; P. M. G. Russell (*c*), Univ. Coll. Hosp.; E. F. Scowen (*d*), St. Bart.'s Hosp.; Eileen M. Whapham (*d*), Roy. Free Hosp.; and S. L. Wright (*a*), Univ. Coll. Hosp.

(*a*) Distinguished in Medicine. (*c*) Distinguished in Forensic Medicine. (*d*) Distinguished in Surgery. (*e*) Distinguished in Obstetrics and Gynæcology.

Pass.—John Apley, Univ. Coll. Hosp.; H. B. Barker, St. Mary's Hosp.; W. S. Baxter, St. Bart.'s Hosp.; C. R. Birnie, King's Coll. Hosp.; J. B. Blaikley, Guy's Hosp.; A. E. Bowling and Winifred M. Burbury, Univ. of Leeds; Albert Burkhardt, Univ. Coll. Hosp.; Jack Carlton, Guy's Hosp.; R. C. Cohen, Univ. Coll. Hosp.; Margaret J. Cooper and Iris M. Cullum, Roy. Free Hosp.; James Davson, Univ. Coll. Hosp.; Mary T. Day, Charing Cross Hosp.; Gwyneth N. Ellis, Roy. Free Hosp.; A. C. Frazer, St. Mary's Hosp.; Barton Gilbert, St. Thomas's Hosp.; G. P. Gladstone, London Hosp.; F. J. S. Gowar, Middlesex Hosp.; Hilary S. M. Hadaway and Kathleen M. Hart, Roy. Free Hosp.; D. K. Jardine, St. Bart.'s Hosp.; I. G. Jones, Univ. Coll. Hosp.; K. D. Keele, St. Bart.'s Hosp.; Alexander Kennedy, St. Thomas's Hosp.; Stephen Knight, Univ. Coll. Hosp.; Robert Knox, St. Bart's Hosp.; Samuel Leff, and H. G. McComas, Guy's Hosp.; N. F. Maclagan, Middlesex Hosp.; F. M. Mallinson, Univ. Coll. Hosp.; Esther M. Martin, Roy. Free Hosp.; L. G. Norman, Univ. Coll. Hosp.; H. J. C. Page, St. Mary's Hosp.; D. D. Payne, St. Thomas's Hosp.; Martin Phillips, London Hosp.; C. R. D. Porter, Middlesex Hosp.; S. R. C. Price, King's Coll. Hosp.; R. D. Reid and A. C. Riley, St. Bart.'s Hosp.; L. K. Robson, Guy's Hosp.; H. W. Salmon, Middlesex Hosp.; A. G. Sanders, St. Thomas's Hosp.; R. W. Scarff, Middlesex Hosp.; S. A. Scorer and A. G. Signy, Guy's Hosp.; D. A. Smith, St. Bart.'s Hosp.; G. L. Talwar, St. Thomas's Hosp.; Margherita N. Walden, Roy. Free Hosp.; Doris E. C. Walker, Univ. Coll. Hosp.; E. M. Ward, St. Bart.'s Hosp.; S. J. Wheeler, Guy's Hosp.; Shirley E. Whitaker, Univ. Coll. Hosp; and A. L. Wingfield, St. Thomas's Hosp.

The following students have passed in one of the two groups of subjects :—

Group I.—Hamish Allan, Middlesex Hosp.; Arthur Barber, St. Bart.'s Hosp.; G. N. Barker, St. Thomas's Hosp.; Mavis W. M. Beddall, Univ. Coll. Hosp.; W. H. Bradbeer, Guy's Hosp.; Joyce M. G. Clogg, Roy. Free Hosp.; P. A. Cooper, Univ. Coll. Hosp.; Kitty Fraser, Roy. Free Hosp.; R. G. Gilbert, St. Bart.'s Hosp.; George Gilchrist, Guy's Hosp.; A. M. Gill, Middlesex Hosp.; Reginald Glanvill, Guy's Hosp.; Lucy W. Grace, Roy. Free Hosp.; M. D. C. Hosford, St. Bart.'s Hosp.; W. P. Hedgcock, St. Thomas's Hosp.; Constance M. Hoare, King's Coll. Hosp.; Agnes V. Kelynack, Roy. Free Hosp.; L. W. Lauste, St. Thomas's Hosp.; J. T. R. Lewis, Middlesex Hosp.; Mary A. McKean, Roy. Free Hosp.; T. H. Parkman, Charing Cross Hosp.; Norah W. K. Petter and Leah Reder, Roy. Free Hosp.; J. F. Rivers-Moore, London Hosp.; Hetty C. Tester, Roy. Free Hosp.; and A. J. White, Middlesex Hosp.

Group II.—R. E. Angel, St. Bart.'s Hosp.; H. G. E. Arthure, Charing Cross Hosp.; F. R. Bettley, Univ. Coll. Hosp.; G. N. Carrell, Guy's Hosp.; G. T. W. Cashell, King's Coll. Hosp.; W. C. Cresdee, St. George's Hosp.; G. E. Dunkerley, Univ. Coll. Hosp.; A. C. Gladstone, St. Thomas's Hosp.; R. D. Green, London Hosp.; E. S. Harverson, Univ. Coll. Hosp.; M. S. Holzman, London Hosp.; J. S. MacVine, and I. W. Matheson, St. Bart.'s Hosp.; C. P. Seeley, St. Mary's Hosp.; S. F. Smith, St. Thomas's Hosp.; K. S. Southam, Guy's Hosp.; J. G. Stewart, Westminster Hosp.; J. L. Woodhouse, Guy's Hosp.; and Joshua Zeitlin, London Hosp.

Slaughter-house Methods and Equipment

The British Science Guild has appointed a committee of technical experts on Slaughter-house Methods and Equipment. The chairman is Sir Arnold Wilson, who was chairman of the Industrial Health Research Board in 1920; the vice-chairman is Captain C. W. Hume, hon. secretary of the Guild; and the hon. secretary is Mr. John McMath. The other members of the committee include representatives of the Institution of Mechanical Engineers (Mr. John Fearn), the Society of Medical Officers of Health (Dr. Charles Porter), the Model Abattoir Society (Sir James Douglas and Mr. R. Stephen Ayling), the Royal College of Veterinary Surgeons (Prof. F. T. G. Hobday and Lieut.-Colonel T. Dunlop Young), the Royal Sanitary Institute (Mr. J. R. Hayhurst), and the Royal Society for the Prevention of Cruelty to Animals (Lieut.-Colonel T. C. R. Moore, M.P., and Mr. R. O. P. Paddison). The Medical Research Council has also been invited to recommend a member. The terms of reference of the committee are as follows :—

To verify and tabulate information relating to methods of, and equipment for, the slaughtering of animals for food, with especial reference to sanitary, dietetic, and human requirements; to investigate new methods and equipment; to convey information on the subject to local authorities and other bodies and persons.

University of Dublin

Trinity College.—Sir Gowland Hopkins, P.R.S., professor of biochemistry in the University of Cambridge, will deliver the John Mallet Purser lecture on Tuesday, June 14th, at 5 P.M., in the department of physiology. His subject is Some Aspects of Modern Biochemistry.

Indian Medical Service Dinner

The annual dinner of the Indian Medical Service will be held at the Trocadero Restaurant, London, on Wednesday, June 15th, at 7.15 P.M. Major-General J. W. D. Megaw will preside, and the guest of honour will be Sir Samuel Hoare, Secretary of State for India. Tickets and all particulars may be had from the joint hon. secretary, Sir Thomas Carey Evans, Hammersmith Hospital, Ducane-road, London, W. 11.

Post-graduate Course on Birth Control

A lecture and a clinical demonstration on the theory and practice of contraception will be held by Dr. Gladys Cox at the North Kensington Women's Welfare Centre at 6 P.M. on June 23rd and 30th respectively. A similar short course will be held on July 14th and 21st. Further particulars can be obtained from the honorary secretary of the clinic, 12, Telford-road, Ladbroke-grove, London, W.10.

St. John's Hospital Dermatological Society

Sir Thomas Lewis will deliver the annual oration of this society at a meeting to be held at the hospital, 49, Leicester-square, London, W.C., at 5.30 P.M. on Wednesday, June 22nd. His subject is Recent Observations on the Causation of Raynaud's Disease.—The annual dinner will be held at 7 for 7.15 P.M. on the same day at the Criterion Restaurant, Piccadilly-circus.

Société Française de Phoniatrie

On May 9th this society was formed in Paris for the study of questions relating to the physiology and pathology of the voice and speech. Prof. Moure is the president, Dr. Hautant and Prof. Lemaitre vice-presidents, and Dr. Tarneaud secretary-general. Dr. Tarneaud's address is 27, Avenue de la Grande-Armée, Paris, XVIe.

Biochemical Society

A meeting of this society will be held at the agricultural research station of Imperial Chemical Industries, Jealott's Hill, Bracknell, Berks., at 3 P.M., on Saturday, June 11th.

The Parkes Memorial Prize

The prize of 75 guineas in money and the gold medal of the Parkes Memorial Prize for 1931 has been awarded to Captain D. C. Ettles, R.A.M.C.

Merseyside Hospitals Council

The annual report of this council, which has now completed its fifth year of work, states that the total income of the 22 associated hospitals in 1927 was £227,000. Their total income for 1930 (the last year for which complete figures are available) was £269,500, an increase of £42,500. The task the council set itself to achieve in 1927 was to extinguish the annual deficit of the associated hospitals, which amounted to £31,500. The ordinary expenditure has, however, increased by £35,000 per annum; consequently the deficit, instead of being more than extinguished, had, by the end of 1930, been reduced only by £7000. It is pointed out that capital expenditure on extensions and improvements during the three years, 1928–30, amounted to £222,000, and it is added: "Much of this expenditure was no doubt essential for medical efficiency, but whether by closer coördination the efficiency of hospital service as a whole might not have been preserved with less capital expenditure is a question deserving close attention." Notwithstanding that at the end of 1931 the contributory scheme was collecting from over 275,000 persons, the decrease in patients' payments between 1927 and 1930 was only £3000. The ambulance work of the council has greatly increased, and last year 8381 patients were taken to and from the local hospitals at the request of the medical authorities.

Appointments

IRVINE, LILIAN, M.B., B.Ch., B.A.O., D.P.H. Belf., has been appointed Assistant Medical Superintendent at the Liverpool Sanatorium.

Certifying Surgeons under the Factory and Workshop Acts: DUNLOP, J. L., M.B., Ch.B. R.U.I. (Hornsea, Yorks); JENNER, C. W., L.M.S.S.A. (Haslemere, Surrey); and MCKEAN, T. S., M.B., Ch.B. Glasg. (Sutton-in-Ashfield, Nottingham).

PARLIAMENTARY INTELLIGENCE

NOTES ON CURRENT TOPICS

The Town Planning Bill

IN the House of Commons on June 7th the Town and Country Planning Bill was recommitted. On Clause 6 (Preparation or adoption of schemes), Mr. GREENWOOD moved the omission of Subsection 2, which states that a resolution authorising the preparation of a scheme shall not take effect unless and until it is approved by the Minister.

Lieut.-Colonel FREMANTLE supported the omission of the subsection. He said that everybody of experience in town planning, whether voluntary associations or local authorities, supported the Bill as it was originally introduced and regretted that the subsection now proposed to be left out should have been introduced at the instance of the Property Owners' Association. The Association of Municipal Corporations were opposed to the subsection because it curtailed their power to deal with gradual change that might take place in the use of land and the character of buildings within the area of the scheme calculated to prejudice existing property or its amenities or the redevelopment of the land. Those who looked on town planning as a science in local government should be given a free hand because, unless they were untrammelled in covering the whole ground, the scheme was found to fall short of requirements.

The amendment was rejected by 305 votes to 50, and the Bill was read the third time.

Epsom College Bill

In the House of Lords on June 7th the Epsom College Scheme Confirmation Bill was read the third time and passed.

The Public Health (Cleansing of Shell-fish) Bill was read the third time and passed.

HOUSE OF COMMONS

THURSDAY, JUNE 2ND.

Royal Commission on Licensing

Mr. RHYS DAVIES asked the Home Secretary whether any legislation was to be introduced this session in connexion with the report of the Royal Commission on Licensing Laws (England and Wales).—Sir HERBERT SAMUEL replied: As the hon. Member will no doubt have anticipated, the answer is in the negative.

Factory Legislation

Major NATHAN asked the Home Secretary whether he proposed to introduce during the present session a Bill for the consolidation and amendment of the laws relating to factories.—Sir HERBERT SAMUEL replied: I regret there is no possibility of such legislation this session.

Petrol Fumes from Omnibuses

Mr. DAGGAR asked the Home Secretary what steps were taken by his department at present for testing public omnibuses in respect of petrol emanations (fumes and exhaust); if he was satisfied as to their effectiveness; and if he was aware that a number of conductors and drivers of such vehicles were reporting sick, with headache and gastritis, owing to this cause.—Sir HERBERT SAMUEL replied: Every omnibus is given a running test before being licensed, special care being taken to see that no excessive or obnoxious fumes are emitted; and if any vehicle, after being licensed, is seen to be offending in this respect, the licence is suspended and it is removed from service until the defect has been remedied. I have no reason to doubt the general effectiveness of these arrangements; and so far as I am aware only two cases have occurred during the present year in which it is claimed that sickness has resulted from the cause suggested.

Supply of Milk to School-children

Captain HEILGERS asked the President of the Board of Education whether, in view of the increased use of milk in elementary schools in the last year, he would take steps to encourage the further consumption of milk in all schools while at the same time insisting that wherever possible only Certified or Grade A milk should be used.—Sir DONALD MACLEAN replied: I am anxious to see a further extension of the arrangements for the supply of milk to children in public elementary schools, and I am coöperating with the National Milk Publicity Council to that end. In approving arrangements for the provision of milk by local education authorities, the Board call the attention of the authorities to the importance of their satisfying themselves as to the purity and quality of the milk, and they recommend the use of pasteurised or tuberculin-tested milk.

Cancer Research

Dr. MORRIS-JONES asked the Minister of Health how much of the grant provided by Parliament annually towards the expenditure of the Medical Research Council was allocated for cancer research; how many cancer research workers there were receiving financial assistance; on what basis the individual research workers were selected, and what was the amount of grant received by each, respectively.—Sir E. HILTON YOUNG replied: No special allocation of any part of the inclusive grant in aid received by the Medical Research Council from the Exchequer is made to cancer research as such. I am advised that in our present state of knowledge it is in fact neither possible nor desirable to decide the present or future relevance of particular new lines of inquiry to the special problem of cancer. To work expressly directed to cancer the Council assign at present about £6000 a year, exclusive of expenditure upon radiology and radiotherapy. The work supported by the Council is described in the annual reports which are presented to Parliament, but it is not the practice of the Council to give details of the amount of the grants paid to individual research workers.

Danger of Swamp Fever in Doncaster Area

Mr. THOMAS WILLIAMS asked the Minister of Health what steps the sanitary and health authorities were taking in the Doncaster area to avoid the danger of swamp fever spreading when the floods subsided; and whether his department would undertake to bear any portion of the financial responsibility involved in these measures.—Sir E. HILTON YOUNG replied: I understand from the reports of my inspectors, who, since the floods began, have been and still are upon the spot for the assistance (inter alia) of the local authorities, that the local medical officers of health have been actively engaged in inquiries into the possibility of danger to health, with special reference to the question of pollution of the water-supplies and such dangers as those referred to in the question. The resources of my department are immediately available for their assistance, advice, and support as may be required; but there are no funds at my disposal for the purpose suggested in the last part of the question.

Vaccination in the Army

Mr. NEIL MACLEAN asked the Financial Secretary to the War Office for what reasons an Army order or instruction had been issued to Army medical officers instructing them to discontinue the use of boracic lint and of vaccination pads, and notifying them that when the present stocks were exhausted no further issue of vaccination pads, &c., would be made; whether this order meant vaccination in the Army was to cease; and, if not, whether he would state the purpose of this order.—Mr. DUFF COOPER replied: The decision not to issue further supplies of boracic lint and vaccination pads was made in the interests of economy. Boracic powder and plain lint will be issued instead. The answer to the second part of the question is in the negative.

MONDAY, JUNE 6TH.

Naval Ratings and Invaliding

Sir BERTRAM FALLE asked the First Lord of the Admiralty the number of naval ratings invalided during the year 1931, and the number during this period whose invaliding disability was considered to be attributable to service; and the number of naval ratings invalided during this period with tuberculosis, and the number awarded disability pensions for this disability.—Lord STANLEY (Parliamentary Secretary to the Admiralty) replied: The number of Naval ratings (including Royal Marines) invalided during the year 1931 was 888, and the number whose disability was considered to be attributable to the Service was 193. The number invalided during that period with pulmonary tuberculosis was 156, and in 117 of these cases pensions were granted on the attributable scale.

Sir BERTRAM FALLE asked the First Lord of the Admiralty the number of boy ratings of all branches of the Royal

Navy and Royal Marines who were invalided during the year 1931, and the number in the same period who were invalided with tuberculosis, heart complaints, and kidney trouble.—Lord STANLEY replied: The number of boy ratings of all branches of the Royal Navy and Royal Marines who were invalided during the year 1931 was 54; the numbers in the same period who were invalided with pulmonary tuberculosis, heart complaints, and kidney trouble were 3, 12, and 2 respectively.

TUESDAY, JUNE 7TH.

School Dental Service

Captain HEILGERS asked the President of the Board of Education the average number of children for whom a dental surgeon was provided by local authorities; and whether he was satisfied that the number of dental surgeons was sufficient.—Sir D. MACLEAN replied: The number of dentists employed by local education authorities under the school medical service is equivalent to one dentist for approximately 9000 children in average attendance. While considerable progress has taken place in recent years, I am fully aware that in many areas there is not a complete dental service.

Miners' Welfare Fund

Sir WILLIAM JENKINS asked the Secretary for Mines what progress was being made with the committee of inquiry into the miners' welfare fund; and when the report was likely to be published.—Mr. FOOT replied: I am informed that the committee expect to complete their taking of evidence this month, and hope to present their report in the early autumn.

Alleged Overcrowding in Paddington

Mr. GOLDIE asked the hon. Member for Central Leeds (Mr. Denman), as representing the Ecclesiastical Commissioners, whether he was aware of the defective condition of, and the overcrowding existing in, the estates controlled by the Commissioners in the borough of Paddington; what steps it was proposed to take to remedy the conditions; and, in particular, what sum it was proposed to expend during the current financial year in alterations and improvements.—Mr. DENMAN replied: The allegation in this question appears to be that houses in the borough of Paddington under the control of the Ecclesiastical Commissioners are suffering from overcrowding or defective conditions. Far from being aware of this, I invite the hon. Member either to substantiate the allegation or publicly to withdraw it.

Coal-dust and Anthracosis

Sir WILLIAM JENKINS asked the Lord President of the Council whether the Medical Research Council was still inquiring into the effect of coal-dust upon underground workers who were suffering from anthracosis; and, if so, when the report would be published.—Mr. BALDWIN (Lord President of the Council) replied: The matter continues to receive the attention of the Industrial Pulmonary Diseases Committee of the Medical Research Council, but I am advised that serious difficulties are still being met in finding trustworthy methods of investigation. There is at present no question of a report.

Imports of Bromine

Sir ALFRED KNOX asked the President of the Board of Trade what amount of bromine had been imported into, and exported from, this country since May, 1931; and what proportion, if any, had been consigned to Germany or Russia.—Mr. RUNCIMAN replied: During the 12 months ended April 30th, 1932, the total imports of bromine and bromides into the United Kingdom amounted to 12,410 cwts., and the exports to 1093 cwts. (including re-exports 664 cwts.). No exports of bromine or bromides were registered during this period as consigned to the Soviet Union, and the only consignments to Germany consisted of 5 cwts. re-exported.

INFECTIOUS DISEASE

IN ENGLAND AND WALES DURING THE WEEK ENDED MAY 28th, 1932.

Notifications.—The following cases of infectious disease were notified during the week:—Small-pox, 68 (last week 54); scarlet fever, 1346; diphtheria, 681; enteric fever, 28; acute pneumonia (primary or influenzal), 832; puerperal fever, 35; puerperal pyrexia, 111; cerebro-spinal fever, 69; acute poliomyelitis, 4; acute polio-encephalitis, 1; encephalitis lethargica, 13; dysentery, 14; ophthalmia neonatorum, 109. No case of cholera, plague, or typhus fever was notified during the week.

The number of cases in the Infectious Hospitals of the London County Council on May 31st–June 1st was as follows:—Small-pox 84 under treatment, 2 under observation (last week 89 and 5 respectively); scarlet fever, 1554; diphtheria, 1309; enteric fever, 9; measles, 2314; whooping-cough, 391; puerperal fever, 15 (plus 6 babies); encephalitis lethargica, 227; poliomyelitis, 3; "other diseases," 96. At St. Margaret's Hospital there were 16 babies (plus 9 mothers) with ophthalmia neonatorum.

Deaths.—In 117 great towns, including London, there was one death from small-pox, 2 (0) from enteric fever, 74 (26) from measles, 7 (2) from scarlet fever, 34 (3) from whooping-cough, 22 (6) from diphtheria, 40 (13) from diarrhœa and enteritis under two years, and 29 (4) from influenza. The figures in parentheses are those for London itself.

Small-pox was mentioned as the cause of death in a case provisionally assigned to Bermondsey (Met. Borough). The fatal cases of enteric fever outside London occurred at Stockport and Birmingham. Liverpool reported 13 deaths from measles, Burton-on-Trent 4, and Bootle 3. Four fatal cases of whooping-cough occurred at Liverpool and 4 at Manchester. Diphtheria accounted for 5 deaths at Liverpool, 3 at Leeds.

The number of stillbirths notified during the week was 270 (corresponding to a rate of 36 per 1000 total births), including 51 in London.

Medical Diary

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

THURSDAY, June 16th.—5 P.M., DERMATOLOGY. (Cases at 4 P.M.). Mr. H. Corsi: Rare Type of von Recklinghausen's Disease.

FRIDAY.—8.15 P.M., OBSTETRICS AND GYNÆCOLOGY. Mr. L. Carnac Rivett: Modern Methods for Alleviating Pain in Childbirth. (A discussion will follow.) Dame Louise McIlroy: Indications for Cæsarean Section.

PADDINGTON MEDICAL SOCIETY.

TUESDAY, June 14th.—9 P.M. (at the Great Western Royal Hotel, Paddington, W.), Annual Meeting. Dr. G. de Swietochowski: A Doctor's Mandate. (Presidential Address.)

ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE, Manson House, Portland-place, W.

THURSDAY, June 16th.—8.15 P.M., Discussion on Synthetic Anti-Malarial Preparations and Quinine, to be opened by Col. S. P. James, and continued by Prof. W. Schülemann of Elberfeld, Prof. N. H. Swellengrebel of Amsterdam, Dr. C. A. Henry, Sir Henry Dale, and Dr. Keilin.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL NORTHERN HOSPITAL, Holloway-road, N.

MONDAY, June 13th.—2.15 P.M., Mr. Frederick Roques: Prolapse. 3.15 P.M., Mr. W. B. Gabriel: Surgical Ward Cases.

TUESDAY.—2.15 P.M., Mr. McNeill Love: Some Common Diseases of Bones. 3.15 P.M., Dr. Bruce Williamson: Rational Use of Digitalis.

WEDNESDAY.—2.15 P.M., Mr. A. M. Zamora: Atypical Mastoid Infections. 3.15 P.M., Dr. B. Buckley Sharp: Modern Methods of Treatment of Neurosyphilis in Practice.

THURSDAY.—2.15 P.M., Dr. A. Lisle Punch: Cardiac Arrhythmias in General Practice. 3.15 P.M., Mr. L. E. Barrington-Ward: Demonstration of Surgical Cases.

FRIDAY.—2.15 P.M., Dr. W. R. Reynell: The Epilepsies and Allied Morbid Conditions. 3.15 P.M., Mr. Hamilton Bailey: Lecture Demonstration.

WEST LONDON HOSPITAL POST-GRADUATE COLLEGE, Hammersmith, W.

MONDAY, June 13th.—10 A.M., Gynæcological Wards, Skin Dept. 2 P.M., Surgical Wards, Gynæcological and Eye Out-patients.

TUESDAY.—10 A.M., Medical and Surgical Demonstrations. 2 P.M., Throat Out-patients. 4.15 P.M. (Lecture). Mr. Steadman: Pyorrhœa.

WEDNESDAY.—10 A.M., Medical Wards, Children's Out-patients. 2 P.M., Eye Out-patients.

THURSDAY.—10 A.M., Neurological Out-patients, Fracture Demonstration. 2 P.M., Eye and Genito-Urinary Out-patients.

FRIDAY.—10 A.M., Medical Wards, Skin Dept. 2 P.M., Throat Out-patients. 4.15 P.M. (Demonstration). Dr. Archer: Biochemical.

SATURDAY.—10 A.M., Children's Out-patients, Medical Wards, Operations, Medical and Surgical Out-patients daily at 2 P.M. 4.15 P.M., Lectures open to all Medical Practitioners without fee.

ST. PAUL'S HOSPITAL, Endell-street, W.C.

WEDNESDAY, June 15th.—Mr. R. H. J. Swan Genito-Urinary Tuberculosis.

NATIONAL HOSPITAL, Queen-square, W.C.

MONDAY, June 13th.—2 P.M., Dr. Riddoch: Out-patient Clinic. 3.30 P.M., Dr. Hinds Howell: Cerebral Aneurysms.
TUESDAY.—2 P.M., Dr. Walshe: Out-patient Clinic. 3.30 P.M., Dr. Adie: Disseminated Sclerosis.
WEDNESDAY.—2 P.M., Dr. Martin: Out-patient Clinic.
THURSDAY.—2 P.M., Dr. Kinnier Wilson: Out-patient Clinic. 3.30 P.M., Mr. Just: Vertigo.
FRIDAY.—2 P.M., Dr. Adie: Out-patient Clinic. 3.30 P.M., Dr. Carmichael: Syringomyelia.

ST. MARK'S HOSPITAL, City-road, E.C.

THURSDAY, June 16th.—4.30 P.M., Mr. J. P. Lockhart-Mummery: Rectal Abscess.

ST. PETER'S HOSPITAL, Henrietta-street, W.C.

WEDNESDAY, June 15th.—3 P.M., Mr. Clifford Morson: Congenital Abnormalities of the Kidneys and their Treatment.

NATIONAL CENTRE AND POST-GRADUATE SCHOOL OF RADIOTHERAPY, Riding House-street, W.

WEDNESDAY, June 15th.—4.30 P.M., Mr. Douglas Harmer: Nasal Sinus.

Vacancies

For further information refer to the advertisement columns.

Aberdeen Royal Infirmary.—Asst. M.O. for Radium Department.
Altrincham General Hospital.—Sen. and Jun. H.S. **At rate of £150 and £120 respectively.**
Bath, Royal Mineral Water Hospital.—Fourth Hon. Surgeon.
***Bedford County Hospital.*—Second H.S. At rate of £140.**
Belfast, Queen's University.—Obstetric Tutor. £200.
***Birkenhead County Borough.*—Res. Asst. M.O. £350**
Birmingham.—M.O. for Cadbury Bros., Ltd, Bournville.
Birmingham Queen's Hospital.—Res. Surg. O. and Res. Surg. Reg. £150 and £100 respectively.
Blackburn Royal Infirmary.—Fourth H.S. £150.
***Brighton County Borough, Public Assistance Committee, Poor-law Institution.*—Res. M.O. £850 and Sen. Res. Asst. M.O. £400.**
Bristol, Ham Green Hospital and Sanatorium.—Jun. Asst. M.O. At rate of £250.
***Burnley, Victoria Hospital.*—H.P. At rate of £150.**
***Burton-on-Trent, Bretby Hall Orthopædic Hospital.*—Locum. At rate of £350.**
Bury Infirmary, Lancs.—Third H.S. At rate of £150.
***Bury and District Joint Hospital Board.*—Asst. to Med. Supt. £400.**
Buxton, Devonshire Hospital.—Asst. H.P. At rate of £175.
Cambridge, Addenbrooke's Hospital.—Res. Anæsthetist and Emergency Officer. At rate of £130.
***Cardiff, City Lodge Institution.*—Asst. M.O. £150.**
***Carlisle, Cumberland Infirmary.*—Second H.S. £155.**
***Carmarthen, Joint Counties Mental Hospital.*—Laboratory Asst. £150.**
Chailey, Sussex, Orthopædic Hospitals and Schools.—Res. M.O. £250.
***Chester Royal Infirmary.*—H.S. At rate of £150.**
Derby.—Locum Res. Asst. M.O. for Walton Sanatorium, near Chesterfield. At rate of £350.
***Doncaster Royal Infirmary.*—Cas. H.S. At rate of £175.**
***East London Hospital for Children, Shadwell, E.*—H.P. and H.S. Each at rate of £125.**
***Exeter, Royal Devon and Exeter Hospital.*—Sen. and Jun. H.S. At rate of £250 and £150 respectively.**
***Freemasons Hospital and Nursing Home, 237, Fulham-road, Chelsea, S.W.*—Res. M.O. At rate of £250.**
***Fulham Hospital, St. Dunstan's-road, Hammersmith, W.*—Clin. Asst. At rate of £100.**
Glasgow, West of Scotland Neuro-Psychiatric Institute.—Director. £850.
Gloucester, Gloucestershire Royal Infirmary and Eye Institution.—Second H.S. At rate of £120.
Halifax, St. Luke's Hospital.—Jun. Res. M.O. £250.
***Hammersmith Hospital, Ducane-road, Shepherd's Bush, W.*—Res. Asst. M.O. £350.**
***Hampstead General and North-West London Hospital, Haverstock Hill, N.W.*—H.S. At rate of £100.**
Hospital of St. John and St. Elizabeth, 60, Grove End Road, N.W.—Res. H.P. At rate of £100.
Huddersfield Royal Infirmary.—Cas. O. and Two H.S's. £225 and £150 respectively.
***Hull Royal Infirmary.*—Third H.S. At rate of £150.** Also H.P. at Sutton Branch Hospital. At rate of £160.
***Indian Medical Service.*—Appointments Commission.**
***Jerusalem, St. John Ophthalmic Hospital.*—H.S.**
***Kidderminster and District General Hospital.*—H.S. £150.**
Kimberley Hospital, South Africa.—Radiologist. £900.
King Edward Memorial Hospital, Ealing.—Sen. Res. M.O. £250.
Lewisham Hospital, High-street, Lewisham, S.E.—H.P. At rate of £80.
***Lincoln County Hospital.*—Jun. H.S. At rate of £150.**
Liverpool, Alder Hey Children's Hospital.—Med. Supt. £1000.
***London University.*—Examinerships.**
***Middlesbrough, North Ormesby Hospital.*—H.P. £120.**
Miller General Hospital, Greenwich-road, S.E.—Out-patient Officer and Cas. O. Each at rate of £150. Also Two H.S.'s and H.P. Each at rate of £100.
Newcastle-upon-Tyne, Royal Victoria Infirmary.—Res. Anæsthetist. £300. Also Jun. Surg. Reg. At rate of £150. Also Res. H.P.'s. and H.S.'s. Each at rate of £50.
***Northampton General Hospital.*—H.S. At rate of £150.**
Norwich, Norfolk and Norwich Hospital.—H.S. to Special Depts. £120.
***Nottingham General Hospital.*—H.S. At rate of £150.**
Oldham Royal Infirmary.—H.S. At rate of £175.
Oxford City.—Deputy M.O.H. £600.
***Paddington Green, Children's Hospital, W.*—H.P. and H.S. Each at rate of £150.**
***Preston, Lancs, Biddulph Grange Orthopædic Hospital.*—Jun. H.S. £150.**
Princess Beatrice Hospital, Richmond-road, Earl's Court, S.W.—Cas. O. and H.P. £100.
Queen Mary's Hospital for the East End, E.—H.S. At rate of £120.
Queen's Hospital for Children, Hackney-road, E.—Ophth. Surg. Also H.P. and Cas. O. Each at rate of £100.
Reading, Royal Berkshire Hospital.—H.S. £150.
Royal College of Physicians, Pall Mall, S.W.—Two Leverhulme Research Scholarships. Each £500.
Royal National Orthopædic Hospital, 234, Gt. Portland-street, W.—H.S. for Country Branch, Brockley Hill, Stanmore. At rate of £150.
Royal Waterloo Hospital for Children and Women, Waterloo-road, S.E.—H.P. At rate of £100.
***St. Mary's Hospital, W.*—First Asst. Pathologist. £500.**
St. Peter's Hospital for Stone, Henrietta-street, Covent Garden, W.C. Clin. Assts.
***Salford.*—Asst. Res. M.O. for Hope Hospital, Pendleton. At rate of £250.**
Southport General Infirmary.—Sen. H.S. £200.
***South Shields, Harton Hospital.*—H.S. £150.**
Stockport Infirmary.—Jun. H.S. £150.
Stoke-on-Trent, North Staffordshire Royal Infirmary.—Orthopædic H.S. £150. Also Asst. H.P. £125.
Sudan Medical Service.—Three M.O.'s. Each £E720.
Torquay, Torbay Hospital.—Locum.
Tunbridge Wells and Counties General Hospital.—H.S. £160.
Warrington Infirmary and Dispensary.—Jun. H.S. £175.
West Bromwich, Hallam Hospital.—Sen. Res. M.O. £350. Also Two Res. H.P.'s. Each £200.
***West End Hospital for Nervous Diseases, Regent's Park, N.W.*—Jun. H.P. At rate of £100.**
***West London Hospital, Hammersmith-road, W.*—H.P. and H.S. Each at rate of £100.**
Winchester, Royal Hampshire County Hospital.—H.S. At rate of £125.
Woking and District Victoria Hospital.—Res. M.O. At rate of £100.
***Woolwich and District War Memorial Hospital, Shooters Hill, S.E.*—H.P. and H.S. Each at rate of £100.**
Wrexham and East Denbighshire War Memorial Hospital.—Two Res. H.S.'s. Each at rate of £150.

The Chief Inspector of Factories announces a vacancy for a Certifying Factory Surgeon at Rocester (Stafford).

Births, Marriages, and Deaths

BIRTHS.

HOLDER.—On May 31st, the wife of Dr. S. E. Holder, of Berks Mental Hospital, Wallingford, of a daughter.
WALSH.—On June 5th, the wife of Robert A. Walsh, M.D., of Stucley House, Great West-road, Lampton, Middlesex, of a daughter.
WOOD.—On May 29th, at Park Village West, Regent's Park, N.W., the wife of Dr. W. Burton Wood, of a daughter.

MARRIAGES.

BOLT—BULL.—On June 4th, at the Parish Church, Hayes, Kent Dr. William V. Dujardin Bolt to Irene, only daughter of Mr. and Mrs. F. H. Bull, of Bromley, Kent.
LAWSON—HOWARD.—On June 2nd, at St. James's, Spanish-place, David Forbes Lawson, M.A., B.Ch., to Lillias Mary Howard, daughter of Thomas Howard, M.B., and Mrs. Howard, late of Portland, Dorset.
MANNINGTON—FAWCETT.—On June 2nd, at St. George's Church, Hornsey, Frank Mannington, F.R.C.S. Eng., to Ruth, youngest daughter of the late Sidney Fawcett, of Salisbury, and Mrs. Fawcett, Muswell Hill.
ROBINSON—WILLIAMS.—On May 29th, at Benton, Richard Deane Robinson, M.B., B.S., to Freeda, younger daughter of Mr. and Mrs. C. Williams, of Benton, Illinois, U.S.A.

DEATHS.

BATESON.—On June 5th, at Brighton, after a brief illness, Henry Bateson, M.D., L.R.C.P., L.R.C.S., L.R.F.P.S., of Overdene, Southwick, Sussex, and late of Walkden, Manchester, aged 60 years.
BOUTFLOWER.—On June 1st, at Stenecourt, Kersal, Andrew Boutflower, M.R.C.S., in his 88th year.
CHAPMAN.—On May 31st, suddenly at Chatham, Paul Morgan Chapman, F.R.C.P., M.B.E., in his 80th year.
CHRISTY.—On May 29th, in the Belgian Congo, Cuthbert Christy, M.B., C.M., late Major R.A.M.C., of Chignal St. James, Chelmsford, in his 69th year.
CRUICKSHANK.—On May 29th, at Naylor House, Larkhall, S.W., James Burr Cruickshank, M.B., Ch.B., son of the late Peter Cruickshank, M.A., Tarves, Aberdeenshire.
DE CHAZAL.—On June 2nd, in London, Edmond Lucien de Chazal, M.D. Lond.
GARSON.—On May 31st, at Ewell-grove, Ewell, Surrey, John George Garson, M.D. Edin., L.R.C.S. Edin., in his 78th year.
GRANGER.—On June 2nd, at Fron Haul, Bodfari, Farington Marsden Granger, M.R.C.S., L.R.C.P. (late of Chester).

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

NOTES, COMMENTS, AND ABSTRACTS

THE SAFETY OF PEDESTRIANS

LORD DANESFORT'S BILL.

THE Road Traffic (Compensation for Accidents) Bill, sponsored by Lord Danesfort, which won a second reading on June 2nd by 22 votes to 8, proposes to make the motorist liable for traffic casualties irrespective of any question of his negligence. The Bill has no chance of becoming law this session, but its supporters were by no means confined to those who dislike all forms of mechanical transport or who, like Lord Buckmaster, have unfortunately been the victims of accident themselves. Lord Buckmaster's Road Traffic Bill, read a second time last April, sought to increase criminal penalties. Lord Danesfort's Bill merely proposes to extend civil liability and compulsory insurance. It is a Bill for pedestrians and pedal cyclists; it does not apply to accidents between two sets of motorists—because motorists are already compulsorily insured and will be looked after, according to Lord Danesfort, by the insurance companies. Advocates of a change in the existing law can point to the appalling loss of life under present conditions—7300 persons killed in 1930 (over half of them pedestrians), not to mention 178,000 persons injured. Graphic comparisons have been made with the total casualties of the Boer War or of the Battle of Waterloo or with the epidemics of the past, but indeed the figures speak for themselves. Motorists, says Lord Danesfort, are always insured; they have to be, by statute. The pedestrian is seldom insured, and therefore must fight a powerful insurance company which will naturally raise all possible defences. The plaintiff's first obstacle is his duty to prove the driver's negligence. If the pedestrian has been killed, the main witness is removed; if he is seriously injured, his recollection will be confused and imperfect; it may be difficult to produce other witnesses. Thus the plaintiff may be driven to accept what compensation the insurance company may offer rather than fight a long, costly, and doubtful battle.

Even when the plaintiff has proved the driver's negligence, there is a further obstacle in the defence of contributory negligence—a highly technical matter. Parliament, says Lord Danesfort, owes the pedestrian some protection because it has changed the law and now allows the motorist to travel at speeds which, but for the change, would have been impossible. The legal and legislative analogies to the proposed principle of compensation without proof of negligence have already been mentioned in our columns (THE LANCET, March 19th, 1932, p. 629). Other European countries have adopted a similar rule of liability though they vary in the defences they permit. Lord Danesfort's Bill makes an exception where the injury is caused by the negligence of the person injured. He hinted he would not mind amending his Bill to allow another exception (as in some continental countries) in the case of *force majeure*. The Lord Chancellor seemed willing to accept the principle of the absolute liability of motorists. He found an analogy in the legal doctrine that a man keeps a lion or a tiger at his peril; if the animal is taken out upon the highway and escapes or gets out of control, there is liability for consequent injuries irrespective of negligence. Lord Sankey seemed ready to fix motorists with the onus of establishing some lawful defence, but he wanted further examination of the defences available. So much for the legal aspect of the Bill. The practical issue is a matter for the insurance companies. How much will they increase their rates of premium on policies complying with Part II. of the Road Traffic Act? A new class of accidents will be ranking for compensation and the opportunities for unscrupulous claims will be multiplied. The ordinary arguments against the Bill will readily occur to motorist's minds. It is unfair to make a defendant prove his innocence; it is unreasonable to have one liability for the motor-car and another for the farmer's gig; the motorist is already taxed heavily and should be spared further imposition; the average driver is a careful man and not a wild animal; and pedestrians should not be encouraged to sally forth with no sense of responsibility. Earl Howe doubted if many pedestrians are acquainted with the admirable Highway Code issued by the Ministry of Transport. And there is much to be said for Lord De Clifford's plea that the division of road-users into motorists and pedestrians, almost on the lines of class-warfare, is unfortunate and should not be fostered. The Earl of Plymouth, as the mouth-piece of the Ministry, supported the second reading of the Bill but declined to commit the Government to its terms.

In the Memorandum prefixed to his Bill, Lord Danesfort claims that his proposals will help the hospitals by indirectly extending the scope of Section 36 (2) of the Road Traffic Act. The Act has been of such meagre use to the hospitals that they may hardly be interested in the extension. Viscount Cecil read to the House an extract from the Poplar Hospital report which declared that the first year's working of the Act must be taken to indicate that motoring accidents to children are always the child's fault, "for in no single instance has the Hospital's account for the child been paid." If this means that in no single case has a child been able to prove the motorist's negligence, the implications of the statement will confirm many in their support of the Bill. The position of the hospitals in relation to traffic casualties is, of course, a separate problem in itself. Lord Danesfort's Bill, in its endeavour to simplify and shorten its proposals, leaves this problem untouched.

SEX RESEARCH

THE Proceedings of the Second International Congress for Sex Research, edited by Mr. A. M. Greenwood, have been issued in book form.[1] The volume contains 40 papers in English, 21 in German, 11 in French, 7 in Italian, and 1 in Spanish. It is divided into five parts, headed biology, hormones, therapy, contraception, and sociology, each of which covers a very wide range of subjects. Only a small number of these will be of interest to the medical reader. Nearly 200 pages are devoted to a discussion of hormones, but few of the papers have clinical bearings. Of the twelve chapters in the section on therapy, five are in English. These relate to the clinical use of testicular and ovarian hormones, the constitutional factor in human sterility, and the relation of gonorrhœa to marriage. The subject matter of the two papers on contraception contributed by Mr. J. R. Baker and by Mr. C. I. B. Voge has already been discussed at various times in our columns. Though the preparation of an index would have presented formidable difficulties, in view of the different languages in which the papers are written, it would have repaid the trouble expended upon it.

[1] Edinburgh: Oliver and Boyd. Pp. 637. 21s.

THE SIGNATURES OF PLANTS

IN a case which came up for consideration at the recent meeting of the General Medical Council it was stated, concerning a certain remedy, that a large number of people were employed in collecting the raw material all over the country, at a high expense, while the necessary substance could only be obtained at certain times of the year. The inference is that the remedy is manufactured from plants or a plant, and it is in accordance with custom, where the composition of a therapeutic substance is to remain secret, that we are told that the collection of supply is made expensive because of the rarity of the plants or the obscurity of their habitat. Without assuming that the therapeutic value of our domestic flora has been so well investigated that no plant of any potency remains to be discovered, it is at least unlikely that such is the case, for British botany has been very thorough over a long period. Moreover, the actual value of herbal derivatives has been considerably worked at since the war, when investigations were made to discover if the British Pharmacopœia could be reinforced within our own borders, where circumstances would prevent us from relying upon foreign sources. So that to a considerable extent we can now rely upon scientific trials for estimates formed of the value of any domestic plants.

The popular and almost age-long estimates of the efficacy of certain common plants have been undergoing radical alteration for a hundred years, but an old fame still clings to them. And this has been in some cases due to the influence of symbolism. For the repute of these plants was not infrequently due to what is termed their "signature" and the phrase was often on the lips of bygone herbalists, who were not always consistent in their use of it. Properly speaking, "the signature of a plant" is the possession in any of its constituent parts of some shape or quality suggesting medical employment. In this manner pharmacological claims were supposed to be symbolised. As examples where some characteristic feature of a plant has been regarded popularly as an indication of its therapeutic influences may be mentioned the leaves of the liverwort, a decoction of which has been relied upon as a remedy in hepatic disease; the markings on the inflorescence of euphrasia which dictated its use as an astringent eyewash; and the corolla of prunella, which looks faintly like a bill-hook, wherefore its fomentations have been much esteemed in wounds received by hedgers and ditchers. Similarly certain plants have been regarded as a remedy for pulmonary ailments because their spotted leaves resembled a diseased lung. Sometimes a plant would receive a popular name because of its supposed qualities, and sometimes the popular name would suggest the supposed qualities. "Henbane," for example, is a corruption of "hanging bell," but no one doubts that the name implies that its poison has a particular threat for poultry. Other examples could be adduced of the way in which these popular beliefs have influenced the nomenclature of the hedge-row, and it is just possible that the real medical efficacy of some British herbs may remain to be detected, serious trials not having been made in face of the ancient superstitions.

MALE IMPERSONATORS

THE novel has again made use of the difficult theme the woman in male attire who leads a man's life. Miss Johnstone's heroine ("The Maiden," London: John Murray, 7*s.* 6*d.*) is a pirate and, with reservations, a thoroughgoing pirate until a change of heart comes over her. The story is well told and worth reading. There is possibly an unconscious reason for making the male impersonator into a pirate, as there are several historical precedents. Notably at the beginning of the eighteenth century two women, named Mary Read and Ann Bonney, lived as pirates, but probably as the mistresses of male adventurers; while in the list of women who for one reason or another have donned the habits and imitated the ways of men, it is a curious fact that the sea has always possessed a fascination. The histories of Ann Jane Thornton and Mary Ann Talbot are quite well known, and each managed successfully to conceal her sex for a short period, but none kept up the mystery so completely as James Barry, to whom frequent allusion is made as a female member of the Army Medical Staff. James Barry, whose real name has never been disclosed, though it is suggested that legally she had no name, was a medical student at Edinburgh a century ago, when feminine characteristics in appearance and gait were noticed by other students, but apparently there was nothing sufficiently striking about her female traits to interfere with admission to the Army Staff. In this service she became a prominent person. Some 30 years ago there was considerable correspondence in the columns of THE LANCET turning on her strange history, when several of her actual acquaintances gave descriptions of her appearance, supplying evidence that, in spite of her male attire and military rank, it was a matter of common repute that she was a woman. Reference to Hart's Army List for the year 1865 shows that the name "James Barry" stood at the head of the list of Inspectors General of Hospitals, and in July of that year the *Times* announced the death of "Dr. James Barry," and, later, the fact that it had been officially reported to the Horse Guards that the doctor was a woman. James Barry was said to be the illegitimate daughter of an important peer, and to owe his commission and his official positions in the Service to aristocratic friends, at the same time there appears evidence that she was skilled in her profession. It is noticeable that neither in her case nor in that of any of the marine or military adventurers does there seem any suggestion of sexual perversion. Even in the story of Hannah Snell, who was wounded when serving as a marine, it was always held that this element was wanting, though as "Samuel Bundy" she went through a form of marriage with a woman, and, after discharge from the Navy, the couple lived for years as shopkeepers in the East of London.

PROPHARMACIENS

To the Editor of THE LANCET.

SIR,—I should be glad if one of your learned readers would kindly supply a definition of the words "Propharmacien" and "Médecin Propharmacien." I cannot find these words in my dictionary and I am curious to learn what kind of post this is in France. The words occur in four consecutive advertisements in the current issue of the *Siècle Médical*.

I am, Sir, yours faithfully,

June 2nd, 1932. TRANSLATOR.

Dr. W. HOWARD JONES writes: A letter in the *Daily Telegraph* of June 2nd commenting upon the rewards of hospital consultants, over a name identical with mine, has in some quarters been wrongly attributed to me. I shall be grateful if you will enable me to disclaim all responsibility for this letter.

UNDER the will of Sir Dorabji Tata, who has died in Bavaria, it is understood that a large sum of money will become available for medical research. Before leaving India last April he executed a trust deed covering property worth three crores of rupees (£2,250,000) which will be used mainly for charitable purposes. In addition he set aside 25 lakhs (£187,000) for instituting scholarships for the investigation of diseases at present regarded as incurable. Sir Dorabji, who was chairman of the Tata Iron and Steel Works and many other undertakings in Bombay, was an honorary Fellow of Caius College, Cambridge, where he was formerly an undergraduate.